

COMMONWEALTH OF AUSTRALIA
OFFICIAL YEAR BOOK OF THE COMMONWEALTH
OF AUSTRALIA.



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OF AUSTRALIA

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OF THE

COMMONWEALTH OF AUSTRALIA

No. 23.—1930

Prepared under Instructions from
The Minister of State for Home Affairs,

BY

CHAS. H. WICKENS, I.S.O., F.I.A., F.S.S., Hon. M.S.S. (Paris),
COMMONWEALTH STATISTICIAN AND ACTUARY.

Editor: JOHN STONHAM, M.A.



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CANBERRA

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POPULATION
MORTALITY
MARRIAGES

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CHAS. H. WICKENS, B.Sc., F.I.A., F.S.S., Hon. M.A.S. (Perth)
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PREFACE.

By the Constitution of the Commonwealth of Australia, the Parliament of the Commonwealth is empowered "to make laws for the peace, order, and good government of the Commonwealth, with respect to Census and Statistics." In the exercise of the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following the "Commonwealth Bureau of Census and Statistics" was created. The first Official Year Book was published early in 1908. The publication here presented is the twenty-third Official Year Book issued under the authority of the Commonwealth Government.

The synopsis on pp. IX. to XXII. immediately following shows the general arrangement of the work. In addition to the ordinary Chapters, each issue contains at least one special article dealing with some particular subject of more or less permanent interest. These cannot of course be repeated year after year, but in some instances a brief condensation is given in subsequent issues. While portion of the matter contained in Year Books Nos. 1 to 22 has been reduced to summaries or deleted in the present issue, the special index provided at the end of the volume, together with certain references given in the various Chapters, will assist in tracing it in previous issues. Owing to considerations of economy it was found necessary to present portions of some of the Chapters in this issue in a greatly abbreviated form, and the volume as a whole is some 269 pages smaller in extent than the preceding issue.

The present issue contains a specially-contributed article, dealing with the "Former Numbers and Distribution of The Australian Aborigines," placed at the end of Chapter XXIV., Population.

Amongst the new matter contained in the various Chapters, mention may be made of the sub-sections dealing with "Interstate Trade," "Value of Imports Compared with Duty Paid," and "Value of Imports, Production, and Exports" in Chapter VI., Trade; "Standards Association of Australia" in Chapter XXVI., "Miscellaneous"; and "Apprenticeship" in the Appendix.

Recent information or returns which have come to hand since the various Chapters were sent to press will be found in the Appendix, p. 765.

The material contained in each issue is always carefully examined, but it would be idle to hope that all error has been avoided. The Commonwealth Statistician desires to express appreciation of the opportunity afforded him of improving the Year Book, by those who have been kind enough to point out defects or make suggestions.

My best thanks are due to the State Statisticians, to the responsible officers of the various Commonwealth and State Departments, and to others, who have kindly, and often at considerable trouble, supplied information for this issue.

I wish to express my keen appreciation of the valuable work performed by Mr. J. Stonham, M.A., the Editor of the Year Book, and also of the services rendered by the officers in charge of the various branches of the Commonwealth Bureau of Census and Statistics, upon whom has devolved the duty of revising, or in some cases of re-writing, the Chapters relative to their respective branches.

CHAS. H. WICKENS,
Commonwealth Statistician and Actuary.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
Canberra, 2nd December, 1930.

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STATISTICAL SUMMARY.

STATISTICAL SUMMARY, AUSTRALIA, 1871 TO 1929.

Heading.		Years.						
		1871.	1881.	1891.	1901.	1911.	1921.	1929.
Population ..	Males	928,918	1,247,059	1,736,617	2,004,836	2,382,232	2,798,727	3,277,352
	Females	771,970	1,059,677	1,504,368	1,820,077	2,191,554	2,710,346	3,137,020
	Total	1,700,888	2,306,736	3,240,985	3,824,913	4,573,786	5,509,073	6,414,372
Births ..	No.	63,625	80,004	110,187	102,945	122,193	136,198	129,480
	Rate	38.00	35.26	34.47	27.16	27.21	24.95	20.31
Deaths ..	No.	22,175	33,327	47,430	46,330	47,869	54,076	60,357
	Rate	13.24	14.69	14.84	12.22	10.66	9.91	9.55
Marriages ..	No.	11,623	17,244	23,862	27,753	39,482	46,869	47,501
	Rate	6.94	7.60	7.47	7.32	8.79	8.59	7.45
Agriculture—								
Wheat ..	Area, acs.	1,279,778	3,002,064	3,335,528	5,115,965	7,427,834	9,719,042	14,840,113
	Yld., bshl.	11,917,741	21,443,862	25,675,265	38,561,619	71,636,347	129,088,806	159,679,421
	Av. "	9.31	7.16	7.70	7.54	9.64	13.28	10.76
Oats ..	Area, acs.	225,492	194,816	246,129	461,430	616,794	733,406	1,045,670
	Yld., bshl.	4,251,630	4,795,897	5,726,256	9,789,854	9,561,833	12,147,433	14,108,677
	Av. "	18.85	24.62	23.27	21.22	15.50	16.56	13.49
Barley ..	Area, acs.	48,164	75,864	68,068	74,511	116,466	298,910	354,539
	Yld., bshl.	726,158	1,353,380	1,178,560	1,519,819	2,056,836	6,085,685	6,617,341
	Av. "	15.08	17.84	17.31	20.40	17.66	20.36	18.66
Maize ..	Area acs.	142,078	165,777	284,428	294,849	340,065	305,186	315,140
	Yld., bshl.	4,576,635	5,726,266	9,261,922	7,034,786	8,939,855	7,840,438	8,322,718
	Av. "	32.21	34.54	32.56	23.86	26.29	25.69	26.41
Hay ..	Area, acs.	303,274	768,388	942,166	1,688,402	2,518,351	2,994,519	2,738,673
	Yld., tons	375,871	767,194	1,067,255	2,024,608	2,867,973	3,902,189	3,176,238
	Av. "	1.24	1.00	1.13	1.20	1.14	1.30	1.16
Potatoes(a) ..	Area, acs.	67,911	76,265	112,884	109,685	130,463	149,144	138,068
	Yld., tons	212,896	243,216	380,477	322,524	301,489	388,091	284,050
	Av. "	3.18	3.19	3.37	2.94	2.31	2.60	2.06
Sugar Cane(d) ..	Area, acs.	11,576	19,708	45,444	86,950	101,010	128,356	222,457
	Yld., tons	176,632	349,627	737,573	1,367,802	1,682,250	2,436,890	3,883,725
	Av. "	15.25	17.74	16.23	15.78	16.65	18.99	17.46
Vineyards ..	Area, acs.	16,253	14,570	48,882	63,677	60,602	92,414	115,297
	Wine, gal.	2,104,000	1,488,000	3,438,000	5,816,087	4,975,147	8,542,573	18,600,249
Total value all agricultural production ..		£ 8,941,000	15,519,000	16,988,000	23,385,000	38,774,000	81,890,000	89,440,000
Pastoral, dairying, etc.—								
Live Stock ..	Sheep No.	40,072,955	65,092,719	106,421,068	72,040,211	96,880,234	86,119,068	103,430,773
	Cattle "	4,277,228	8,010,991	11,112,112	8,491,428	11,828,954	14,441,309	11,300,757
	Horses "	701,530	1,088,029	1,584,737	1,620,420	2,278,226	2,438,182	1,942,753
	Pigs "	586,017	703,188	845,888	931,309	1,110,721	960,385	910,181
Wool prod., lb. greasy		179,000,000	332,759,000	631,587,000	543,131,661	721,298,288	721,678,346	968,152,935
Butter production lbs.		(c)	(c)	42,814,585	103,747,295	212,073,745	267,071,340	289,883,200
Cheese "		(c)	(c)	10,130,945	11,845,153	15,886,712	32,653,003	30,217,101
Bacon and ham "		(c)	(c)	16,771,886	34,020,029	53,335,092	58,626,469	74,499,397
Total estimated value of pastoral and dairying production ..		£ 20,736,000	29,538,000	39,256,000	36,890,000	72,883,000	119,399,000	167,450,000
Mineral production—								
Gold ..	£	7,916,627	5,194,390	5,281,861	14,017,538	10,551,622	4,018,685	1,814,457
	£	36,046	45,622	3,736,352	2,248,698	3,022,177	1,539,992	3,293,863
Silver and lead ..	£	880,242	714,003	367,373	2,215,431	2,564,278	803,957	1,075,146
	£	24,022	1,145,889	560,502	448,234	1,209,973	418,418	459,666
Copper ..	£	369	200	2,979	4,067	1,415,169	283,455	988,657
	£	330,510	637,865	1,912,353	2,602,733	3,927,360	10,983,757	8,498,272
Total value all mineral production ..		£ 9,190,330	7,820,290	12,074,106	21,816,772	23,302,878	19,977,384	17,966,627
Forestry production—								
Quantity of local timber sawn or hewn 1,000 sup. ft.		(c)	(c)	(c)	452,131	604,794	590,495	516,388
Manufactories—								
No. of factories ..	No.					14,455	18,023	22,916
	Hands employed					311,710	378,540	450,482
	Wages paid ..	£	(b)	(b)	(b)	27,528,377	68,050,861	90,986,908
	Value added in process of manufacture ..	£				51,259,004	121,674,119	167,623,316
Total value of output ..		£				133,022,090	320,331,765	420,445,288

(a) Partly estimated 1871 and 1881.
effective comparison is impossible.(b) Owing to variation in
(c) Information not available.classification and lack of information
(d) Area of productive cane.

STATISTICAL SUMMARY.—AUSTRALIA, 1871 TO 1929—*continued.*

Heading.	Years.						
	1871.	1881.	1891.	1901.	1911.	1921.	1929.
Shipping—							
Oversea vessels { No. 2,748 3,284 3,778 4,028 4,174 3,674 3,175							
ent. & cleared { ton. 1,812,642 2,549,364 4,726,307 6,541,991 9,984,801 9,503,018 11,097,164							
Commerce (c)—							
Imports oversea £ 17,017,000 29,067,000 37,711,000 42,434,000 66,967,488 103,066,436 143,647,881							
per head £ 10/3/3 12/16/2 11/16/0 11/3/11 14/18/2 18/14/1 22/13/4							
Exports oversea £ 21,725,000 27,528,000 36,043,000 49,696,000 79,482,258 127,846,535 144,850,452							
per head £ 12/19/6 12/2/8 11/5/6 13/2/2 17/13/10 23/4/1 22/17/2							
Total oversea trade £ 38,742,000 56,595,000 73,754,000 92,130,000 146,449,746 230,912,971 288,498,333							
per head £ 23/2/9 24/18/10 23/1/6 24/6/1 32/12/0 41/18/2 45/10/6							
Customs and excise duties £ (e) 4,809,326 7,440,869 8,656,530 13,515,005 27,565,199 40,966,382							
per head £ (e) 2/2/5 2/6/7 2/5/8 2/19/2 5/0/1 6/9/4							
Principal Oversea Exports (a)—							
Wool { lbs. (greasy) £ 176,635,800 328,369,200 619,259,800 518,018,100 720,364,900 927,833,700 857,741,653							
centsals £ 9,459,629 13,173,026 19,940,029 15,237,454 26,071,193 47,977,044 61,612,995							
Wheat £ 479,954 3,218,792 5,876,875 12,156,035 33,088,704 59,968,334 49,137,747							
£ 193,732 1,189,762 1,938,864 2,774,643 9,641,608 28,644,155 20,336,199							
Flour £ 12,988 49,549 33,363 96,814 175,891 359,734 563,803							
£ 170,415 519,635 328,423 589,604 1,891,529 5,519,881 5,998,600							
Butter £ 1,812,700 1,298,800 4,239,500 34,607,400 101,722,100 127,347,400 102,442,843							
£ 45,813 39,383 206,868 1,451,168 4,637,362 7,968,078 7,545,430							
Skins and hides £ 100,123 316,878 873,695 1,250,938 3,227,236 3,136,810 9,280,898							
Tallow £ 914,278 644,149 571,069 877,745 1,935,836 1,441,795 1,384,191							
Meats £ 566,780 362,965 460,894 2,611,244 4,303,159 5,542,162 6,335,949							
Timber (undressed) £ 42,586 118,117 38,448 731,301 1,023,960 1,158,166 1,100,325							
Gold £ 7,184,833 6,445,365 5,703,532 14,315,741 12,045,766 3,483,239 2,984,155							
Silver and lead £ 37,891 57,954 1,932,278 2,250,525 3,212,584 2,697,130 4,327,553							
Copper £ 598,538 676,515 417,687 1,619,145 2,345,961 705,358 354,548							
Coal £ 134,355 361,081 645,972 986,957 900,622 1,099,899 428,754							
Govt. Railways—							
Lgth. of line open, mls. 970 3,832 9,541 12,579 16,078 23,296 26,330							
Capital cost £ 19,269,786 42,741,350 99,764,090 123,223,779 152,194,603 237,479,693 323,770,550							
Gross revenue £ 1,102,650 3,910,122 8,654,085 11,038,468 17,847,837 35,988,900 48,815,726							
Working expenses £ 608,332 2,141,735 5,630,182 7,133,617 10,945,727 29,969,954 38,516,571							
Per cent. of work'g expenses on earnings % 55.17 54.77 65.06 64.63 61.33 83.39 78.90							
Postal—							
Letters and postcards dealt with No. 24,382,000 67,640,000 157,297,000 220,853,000 453,063,000 569,343,456 (d) 796,145,400							
per head £ 14.54 29.61 49.07 58.26 100.90 104.36 (d) 130.29							
Newspapers dealt with No. 3,336,000 38,063,000 85,280,000 102,727,000 141,638,000 130,882,425 (d) 188,715,200							
per head £ 7.95 16.66 26.61 27.10 31.54 24.18 (d) 30.88							
Cheque-paying Banks—							
Note circulation £ 2,456,487 3,978,711 4,417,269 3,406,175 (b) 876,428 211,187 199,846							
Coin & bullion held £ 6,168,869 9,108,243 16,712,923 19,737,572 30,024,225 22,092,371 26,502,264							
Advances £ 26,039,573 57,732,824 129,741,583 89,167,499 116,769,133 233,214,626 282,552,905							
Deposits £ 21,856,959 53,849,455 98,345,338 90,965,530 147,103,081 273,866,737 (h) 330,167,260							
Savings Banks—							
Number of accounts open .. 100,713 250,070 614,741 964,553 1,600,112 3,327,456 4,937,428							
Total deposits £ 3,193,285 7,854,480 15,536,592 30,882,645 59,393,682 154,396,051 225,485,704							
Aver. per account £ 31/14/2 31/8/2 25/5/6 32/0/4 37/2/4 46/8/0 45/13/4							
population £ 1/18/9 3/10/5 4/18/7 8/3/0 13/8/5 28/0/4 35/7/7							
State Schools—							
Number of schools .. 2,502 4,494 6,231 7,012 8,060 9,445 (g) 10,169							
Teachers .. No. 4,641 9,028 12,564 14,500 16,971 26,120 (g) 31,838							
Enrolment .. 236,710 432,320 561,153 638,478 638,850 819,042 (g) 920,060							
Aver. attendance .. 137,767 255,143 350,773 450,246 463,799 666,498 (g) 764,496							

(a) Australian produce, except gold, which includes re-exports. (b) Decrease due to prohibition of re-issue. (c) Figures for Commerce for year 1921 relate to year ended 30th June following. (d) 1927 figures. (e) Not available. (f) Includes Commonwealth Savings Bank deposits. (g) 1928 figures. (h) Excludes Commonwealth Savings Bank deposits.

CHRONOLOGICAL TABLE.

CHRONOLOGICAL TABLE OF CHIEF EVENTS SINCE THE ESTABLISHMENT OF SETTLEMENT IN AUSTRALIA.

NOTE.—The Government was centralized in Sydney, New South Wales, up to 1825, when Tasmania (Van Diemen's Land) was made a separate colony. In the Table, the names now borne by the States serve to indicate the localities.

Year.

- 1788 N.S.W.—Arrival of "First Fleet" at Botany Bay. Land in vicinity being found unsuitable for settlement, the expedition moved to Sydney Cove (now Port Jackson). Formal possession of Port Jackson taken by Captain Phillip on 26th January. Formal proclamation of colony on 7th February. Branch Settlement established at Norfolk Island. French navigator Lapérouse visited Botany Bay. First cultivation of wheat and barley. First grape vines planted.
- 1789 N.S.W.—First wheat harvest at Parramatta, near Sydney. Discovery of Hawkesbury River. Outbreak of small-pox amongst aborigines.
- 1790 N.S.W.—"Second Fleet" reached Port Jackson. Landing of the New South Wales Corps. Severe suffering through lack of provisions. First circumnavigation of Australia by Lieut. Ball.
- 1791 N.S.W.—Arrival of "Third Fleet." Territorial seal brought by Governor King.
- 1792 N.S.W.—Visit of *Philadelphia*, first foreign trading vessel.
- 1793 N.S.W.—First free immigrants arrived in the *Bellona*. First Australian church opened at Sydney. Tas.—D'Entrecasteaux discovered the Derwent River.
- 1794 N.S.W.—Establishment of settlement at Hawkesbury River.
- 1795 N.S.W.—Erection of the first printing press at Sydney. Descendants of strayed cattle discovered at Cowpastures, Nepean River.
- 1796 N.S.W.—First Australian theatre opened at Sydney. Coal discovered by fishermen at Newcastle.
- 1797 N.S.W.—Introduction of merino sheep from Cape of Good Hope.
- 1798 Tas.—Insularity of Tasmania proved by voyage of Bass and Flinders.
- 1800 N.S.W.—First export of coal. First Customs House in Australia established at Sydney. Flinders' charts published.
- 1801 N.S.W.—First colonial manufacture of blankets and linen.
- 1802 Vic.—Discovery of Port Phillip by Lieut. Murray. S.A.—Discovery of Spencer's and St. Vincent Gulfs by Flinders. Q'land.—Discovery of Port Curtis and Port Bowen by Flinders.
- 1803 N.S.W.—First Australian wool taken to England by Capt. Macarthur. Issue of "The Sydney Gazette," first Australian newspaper. Vic.—Attempted settlement at Port Phillip by Collins. Discovery of Yarra by Grimes. Tas.—First settlement formed at Risdon by Lieut. Bowen.
- 1804 N.S.W.—Insurrection of convicts at Castle Hill. Vic.—Abandonment of settlement at Port Phillip. Tas.—Foundation of settlement at Hobart by Collins, and at Yorktown by Colonel Paterson.
- 1805 N.S.W.—First extensive sheep farm established at Camden by Capt. Macarthur. Portion of convicts from Norfolk Island transferred to Tasmania.
- 1806 N.S.W.—Shortage of provisions. Tas.—Settlement at Launceston.
- 1807 N.S.W.—Final shipment of convicts from Norfolk Island. First shipment of merchantable wool (245 lbs.) to England.
- 1808 N.S.W.—Deposition of Governor Bligh.
- 1809 N.S.W.—Isaac Nichols appointed to supervise delivery of overseas letters.
- 1810 N.S.W.—Post-office officially established at Sydney, Isaac Nichols first postmaster. First race meeting in Australia at Hyde Park, Sydney. Tas.—First Tasmanian newspaper printed.
- 1813 N.S.W.—Passage across Blue Mountains discovered by Wentworth, Lawson, and Blaxland. Macquarie River discovered by Evans.
- 1814 N.S.W.—Australia, previously known as "New Holland," received present name on recommendation of Flinders. Creation of Civil Courts.

Year.

- 1815 N.S.W.—First steam engine in Australia erected at Sydney. Lachlan River discovered by Evans. Tas.—Arrival of first immigrant ship with free settlers. First export of wheat to Sydney.
- 1816 N.S.W.—Botanic Garden formed at Sydney.
- 1817 N.S.W.—Oxley's first exploration inland. Discovery of Lakes George and Bathurst and the Goulburn Plains by Meehan and Hume. First bank in Australia opened at Sydney.
- 1818 N.S.W.—Cessation of free immigration. Liverpool Plains, and the Peel, Hastings, and Manning Rivers discovered by Oxley, and Port Essington by Captain King.
- 1819 N.S.W.—First Australian Savings Bank opened at Sydney.
- 1820 Tas.—First importation of pure merino sheep.
- 1821 Tas.—Establishment of penal settlement at Macquarie Harbour.
- 1823 N.S.W.—First Australian Constitution. Discovery of gold at Fish River by Assistant-Surveyor McBrien. Qld.—Brisbane River discovered by Oxley.
- 1824 N.S.W.—Erection into Crown Colony. Executive Council formed. Establishment of Supreme Court at Sydney, and introduction of trial by jury. First Australian Enactment (Currency Bill) passed by the Parliament at Sydney. Proclamation of freedom of the press. First manufacture of sugar. Vic.—Hume and Hovell, journeying overland from Sydney, arrived at Corio Bay. Qld.—Penal settlement founded at Moreton Bay (Brisbane). Fort Dundas Settlement formed at Melville Island, N. Terr.
- 1825 N.S.W.—Extension of western boundary to 129th meridian. Tas.—Separation of Van Diemen's Land (Tasmania). Qld.—Major Lockyer explored Brisbane River to its source, and discovered coal.
- 1826 N.S.W.—Settlement in Illawarra District. Vic.—Settlement at Corinella, Western Port, formed by Captain Wright.
- 1827 N.S.W.—Colony became self-supporting. Feverish speculation in land and stock. Qld.—Darling Downs and the Condamine River discovered by Allan Cunningham. W.A.—Military Settlement founded at King George's Sound by Major Lockyer. First official claim of British Sovereignty over all Australia.
- 1828 N.S.W.—Second constitution. First Census. Sturt's expedition down Darling River. Cotton first grown in Sydney Botanical Gardens. Gas first used at Sydney. Richmond and Clarence Rivers discovered by Captain Rous. Vic.—Abandonment of settlement at Western Port. Qld.—Cunningham discovered a route from Brisbane to the Darling Downs, and explored Brisbane River.
- 1829 N.S.W.—Sturt's expedition down Murrumbidgee River. W.A.—Foundation of settlement at Swan River. Foundation of Perth.
- 1830 N.S.W.—Insurrection of convicts at Bathurst. Sturt, voyaging down Murrumbidgee and Murray Rivers, arrived at Lake Alexandrina. Tas.—Trouble with natives. Black line organized to force aborigines into Tasman's Peninsula, but failed. Between 1830 and 1835, however, George Robinson, by friendly suasion, succeeded in gathering the small remnant of aborigines (203) into settlement on Flinders Island.
- 1831 N.S.W.—Crown lands first disposed of by public competition. Mitchell's explorations north of Liverpool Plains. Arrival at Sydney of first steamer, *Sophia Jane*, from England. S.S. *Surprise*, first steamship built in Australia, launched at Sydney. First coal shipped from Australian Agricultural Company's workings at Newcastle, N.S.W. First assisted immigration to N.S.W. S.A.—Wakefield's first colonization committee. W.A.—Appointment of Executive and Legislative Councils.
- 1832 N.S.W.—Savings Bank of N.S.W. established.
- 1833 N.S.W.—First School of Arts established at Sydney.
- 1834 N.S.W.—First settlement at Twofold Bay. Vic.—Settlement formed at Portland Bay by Henty Bros. Qld.—Leichhardt reached Gulf of Carpentaria. S.A.—Formation of the South Australian Association. W.A.—Severe reprisals against natives at Pinjarrah.

- Year.
- 1835 Vic.—John Batman arrived at Port Phillip; made treaty with the natives for 600,000 acres of land; claim afterwards disallowed by Imperial Government. John Pascoe Fawcner founded Melbourne.
- 1836 N.S.W.—Mitchell's overland journey from Sydney to Cape Northumberland. Vic. "Squatting" formally recognized. Vic.—Proclamation of Port Phillip district as open for settlement. S.A.—Settlement founded at Adelaide under Governor Hindmarsh.
- 1837 N.S.W.—Appointment in London of Select Committee on Transportation. Vic.—Melbourne planned and named by Governor Bourke. First Victorian post-office established in Melbourne. First overlanders from Sydney arrived at Port Phillip.
- 1838 N.S.W.—Discontinuance of assignment of convicts. Qld.—Settlement of German missionaries at Brisbane. S.A.—"Overlanding" of cattle from Sydney to Adelaide along the Murray route by Hawden and Bonney. Settlement at Port Essington, Northern Territory, formed by Captain Bremer.
- 1839 N.S.W.—Gold found at Vale of Clwydd by Count Strezlecki. S.A.—Lake Torrens discovered by Eyre. Port Darwin discovered by Captain Stokes. W.A.—Murchison River discovered by Captain Grey.
- 1840 N.S.W.—Abolition of transportation to New South Wales. Land regulations—proceeds of sales to be applied to payment for public works and expenditure on immigration. Vic.—Determination of northern boundary. Qld.—Penal settlement broken up and Moreton Bay district thrown open. S.A.—Eyre began his overland journey from Adelaide to King George's Sound.
- 1841 N.S.W.—Gold found near Hartley by Rev. W. B. Clarke. Separation of New Zealand. W.A.—Completion of Eyre's overland journey from Adelaide to King George's Sound. Tas.—Renewal of transportation.
- 1842 N.S.W.—Incorporation of Sydney. Vic.—Incorporation of Melbourne. S.A.—Discovery of copper at Kapunda.
- 1843 N.S.W.—First Representative Constitution (under Act of 1842). First manufacture of tweed. Qld.—Moreton Bay granted legislative representation.
- 1844 S.A.—Sturt's last expedition inland. Qld.—Leichhardt's expedition from Condamine River to Port Essington.
- 1845 N.S.W.—Mitchell's explorations on the Barcoo. Qld.—Explorations by Mitchell and Kennedy. S.A.—Discovery of the Burra copper deposits. Sturt discovered Cooper's Creek.
- 1846 N.S.W.—Initiation of meat preserving. Qld.—Foundation of settlement at Port Curtis. S.A.—Proclamation of North Australia. W.A.—Foundation of New Norcia Mission.
- 1847 N.S.W.—Iron smelting commenced near Berrima. Overland mail established between Sydney and Adelaide. Vic.—Melbourne created a City. Qld.—Explorations by Leichhardt, Burnett, and Kennedy.
- 1848 Qld.—Leichhardt's last journey. Kennedy speared by the blacks at York Peninsula. Chinese brought in as shepherds.
- 1849 N.S.W.—Indignation of colonists at arrival of convict ship *Hashemy*. Exodus of population to goldfields of California. Vic.—Randolph prevented from landing convicts. Qld.—Assignment of convicts per *Hashemy* to squatters on Darling Downs. W.A.—Commencement of transportation to Western Australia.
- 1850 N.S.W.—Final abolition of transportation. First sod of first Australian railway turned at Sydney. Vic.—Gold discovered at Clunes by Hon. W. Campbell. Representative government granted. S.A.—Representative government granted. W.A.—Pearl oysters found by Lieut. Helpman at Saturday Island Shoal. Tas.—Representative government granted.
- 1851 N.S.W.—Payable gold discovered by Hargreaves at Lewis Ponds and Summerhill Creek. Telegraph first used. Vic.—Separation of Port Phillip—erected into independent colony under the name of Victoria. Discovery of gold in various localities. "Black Thursday," 6th Feb., a day of intense heat, when several persons died and a vast amount of damage to property was occasioned by fires. W.A.—Proclamation of Legislative Council Act.

Year.

- 1852 N.S.W.—Arrival of the *Chusan*, first P. and O. mail steamer from England. S.A.—First steamer ascends the Murray River to the junction with the Darling. Tas.—Meeting of first elective Council protests against transportation. Payable gold discovered at The Nook, near Fingal, and at Nine Mile Springs.
- 1853 Tas.—Abolition of transportation.
- 1854 Vic.—Opening of first Victorian railway—Flinders-street to Port Melbourne. Riots on Ballarat gold-fields. Storming of the Eureka Stockade, 3rd Dec.
- 1855 N.S.W.—Opening of railway—Sydney to Parramatta. Mint opened. Gregory's expedition in search of Leichhardt.
- 1856 N.S.W.—Pitcairn Islanders placed on Norfolk Island. W.A.—A. C. Gregory's expedition in search of Leichhardt.
Responsible Government in N.S.W., Vic., S.A., and Tas. (Act of 1855).
- 1857 N.S.W.—Wreck of the *Dunbar* (119 lives lost), and *Catherine Adamson* (21 lives lost), at Sydney Heads. Select Committee on Federation. Vic.—Manhood suffrage and vote by ballot. S.A.—Passage of Torrens' Real Property Act.
- 1858 N.S.W.—Establishment of manhood suffrage and vote by ballot. Telegraphic communication between Sydney, Melbourne, and Adelaide. Qld.—Canoona gold rush.
- 1859 Qld.—Proclamation of Queensland as separate colony. Tas.—First submarine cable, via Circular Head and King Island to Cape Otway.
- 1860 Vic.—Burke and Wills left Melbourne and crossed to Gulf of Carpentaria. S.A.—Copper discoveries at Wallaroo and Moonta.
- 1861 N.S.W.—Anti-Chinese riots at Lambing Flat and Burrangong gold-fields. Opening of first tramway in Sydney. Regulation of Chinese immigration. Vic.—Burke and Wills perished at Cooper's Creek, near Innamincka, S.A.
- 1862 N.S.W.—Abolition of State aid to religion. Real Property Act. S.A.—Stuart crossed the Continent from south to north. W.A.—First export of pearl-shell.
- 1863 Vic.—Intercolonial Conference at Melbourne. S.A.—Northern Territory taken over. W.A.—Initiation of settlement in the North-west district. Henry Maxwell Lefroy discovered and traversed area now comprised in the Coolgardie-Kalgoorlie gold-field.
- 1864 Qld.—First railway begun and opened. First sugar made from Queensland cane. Tas.—First successful shipment of English salmon ova.
- 1865 N.S.W.—Destruction by fire of St. Mary's Cathedral, Sydney.
- 1866 N.S.W.—Passage of Public Schools Act of (Sir) Henry Parkes. S.A.—Introduction of camels for exploration, etc.
- 1867 Vic.—Imposition of protective tariff. Qld.—Discovery of gold at Gympie.
- 1868 N.S.W.—Attempted assassination of the Duke of Edinburgh at Clontarf, near Sydney. W.A.—Arrival of the *Hougomont*, last convict ship. Tas.—First sod of first railway (Launceston and Western) turned by Duke of Edinburgh.
- 1869 W.A.—First telegraph line opened from Perth to Fremantle.
- 1870 N.S.W.—Intercolonial Exhibition opened at Sydney. Imperial troops withdrawn. Vic.—Intercolonial Congress at Melbourne. S.A.—Commencement of trans-continental telegraph.
- 1871 N.S.W.—Permanent military force raised. W.A.—Passage of Elementary Education Act. Forrest's explorations. Tas.—Discovery of tin at Mount Bischoff. Launceston-Western railway opened for traffic.
- 1872 N.S.W.—International Exhibition at Sydney. Vic.—Mint opened. S.A.—Cable from Java to Port Darwin. Completion of transcontinental telegraph line.
- 1873 N.S.W.—Intercolonial Conference at Sydney. First volunteer encampment. Inauguration of mail service with San Francisco.
- 1874 N.S.W.—Triennial Parliaments Act passed. Intercolonial Conference. W.A.—John and Alexander Forrest arrived at Overland Telegraph from Murchison.
- 1875 Qld.—Transfer of Port Albany Settlement to Thursday Island.
- 1876 N.S.W.—Completion of cable—Sydney (La Perouse) to Wellington (Wakapuaka). W.A.—Giles crosses colony from east to west. Tas.—Death of Truganini, last representative of Tasmanian aborigines.

- Year.
- 1877 W.A.—Opening of telegraphic communication with South Australia.
- 1878 Qld.—Restriction of Chinese immigration.
- 1879 N.S.W.—First artesian bore at Killara. International Exhibition at Garden Palace, Sydney. First steam tramway. W.A.—A. Forrest's explorations in the Kimberley district, and discovery of the Fitzroy pastoral country.
- 1880 N.S.W.—Public Instruction Act passed. Vic.—Opening of first Victorian International Exhibition at Melbourne. Federal Conference at Melbourne and Sydney.
- 1881 N.S.W.—Further restrictions on Chinese immigration. Visit to Australia of T.R.H. Prince Albert Victor and Prince George.
- 1882 N.S.W.—Garden Palace destroyed by fire. W.A.—Nugget of gold found between Roebourne and Cossack.
- 1883 N.S.W.—Discovery of silver at Broken Hill. Completion of railway between New South Wales and Victoria. Qld.—Annexation of New Guinea—repudiated by Imperial authorities. Federal Conference held at Sydney. Federal Council created.
- 1884 Federation Bill passed in Victoria and rejected in New South Wales. British protectorate declared over New Guinea.
- 1885 N.S.W.—Military contingent sent to the Sudan. Opening of the Broken Hill Proprietary Silver Mines. W.A.—Gold found by prospectors on the Margaret and Ord Rivers in the Kimberley district. Tas.—Silver-lead discovered at Mount Zeehan.
- 1886 Tas.—Discovery of gold and copper at Mount Lyell. First session of Federal Council met at Hobart on the 26th January.
- 1887 N.S.W.—Disaster at Bulli coal mine (81 lives lost). Peat's Ferry (Hawkesbury River) railway accident. S.A.—International Exhibition at Adelaide. W.A.—Cyclone destroyed nearly the whole pearling fleet off the Ninety-Mile Beach—200 lives lost. Gold discovered at Southern Cross. Australasian Conference in London. Australasian Naval Defence Force Act passed.
- 1888 N.S.W.—Centennial celebrations. Restrictive legislation against Chinese imposing poll-tax of £100. Vic.—Second Victorian International Exhibition held at Melbourne. Qld.—Railway communication opened between Sydney and Brisbane. Conference of Australian Ministers at Sydney to consider question of Chinese immigration. First meeting of the Australasian Association for the Advancement of Science held in Sydney.
- 1889 Qld.—Direct railway communication established between Brisbane and Adelaide. W.A.—Framing of new Constitution.
- 1890 W.A.—Responsible Government granted. Meeting at Melbourne of Australasian Federation Conference.
- 1891 N.S.W.—Election to Legislative Assembly of 35 Labour members. Arrival of Australian Auxiliary Squadron. Cessation of assisted immigration. W.A.—Discovery of gold on the Murchison. Federal Convention in Sydney : draft bill framed and adopted.
- 1892 W.A.—Discovery of gold by Messrs. Bayley and Ford at Coolgardie.
- 1893 N.S.W.—Departure by the *Royal Tar* of colonists for "New Australia." Financial crisis, chiefly affecting the eastern States.
- 1895 N.S.W.—Free-trade tariff. Land and income taxes introduced. Conference of Premiers at Hobart *re* Federation.
- 1896 N.S.W.—People's Federal Convention at Bathurst.
- 1897–8 Sessions of Federal Convention at Adelaide, Sydney, and Melbourne.
- 1898 N.S.W.—First surplus of wheat for export. Draft Federal Constitution Bill submitted to electors in Victoria, New South Wales, South Australia, and Tasmania. Requisite statutory number of votes not obtained in New South Wales.

- Year.
- 1899 First contingent of Australian troops sent to South Africa. Conference of Premiers in Melbourne to consider amendments to Federal Constitution Bill. Referendum—Bill accepted by New South Wales, Victoria, Queensland, South Australia, and Tasmania.
- 1900 N.S.W.—Old-age pensions instituted.
Contingents of naval troops sent to China. Commonwealth Constitution Act received Royal Assent, 9th July. Proclamation of Commonwealth signed, 17th September. Mr. (afterwards Sir) Edmund Barton formed first Federal Ministry.
- 1901 Vic.—Old-age pensions instituted.
Proclamation of the Commonwealth at Sydney. First Federal Parliament opened at Melbourne by the Duke of Cornwall and York. Interstate freetrade established.
- 1902 N.S.W.—Disastrous explosion at Mount Kembla Colliery—95 lives lost. W.A.—Opening of pumping station at Northam in connexion with Gold-fields water supply. Completion of Pacific Cable (all-British).
First Federal Tariff.
- 1903 Vic.—Railway Strike (Enginemen). W.A.—Coolgardie and Kalgoorlie Water Supply Scheme completed.
Inauguration of the Federal High Court.
- 1905 N.S.W.—Re-introduction of assisted immigration.
- 1906 Wireless telegraphy installed between Queenscliff, Vic., and Devonport, Tas. Papua taken over by Commonwealth.
- 1907 N.S.W.—Telephone, Sydney to Melbourne, opened.
Imperial Conference in London.
- 1908 Vic.—Railway accident at Braybrook Junction (Sunshine)—44 killed, 412 injured; compensation paid, £128,000.
Canberra chosen as site of Federal Capital.
- 1909 Imperial Defence Conference in London—Commonwealth ordered two destroyers and one first-class cruiser for fleet unit. Visit of Lord Kitchener to report and advise on Commonwealth military defence. Loss of the *Waratah* with 300 passengers and crew.
- 1910 Vic.—Railway accident at Richmond—9 killed, over 400 injured; compensation paid, £128,000.
Referendum on financial relations between the Commonwealth and the States. Penny postage. Arrival of the *Yarra* and *Parramatta*, first vessels of Australian navy. Australian Notes Act passed and first Commonwealth notes issued. Admiral Sir R. Henderson visited Australia to advise on naval defence.
- 1911 First Federal Census. Transfer of Northern Territory to Commonwealth. Introduction of compulsory military training. Launch of Commonwealth destroyer *Warrego* at Sydney. Establishment of penny postage to all parts of British Empire.
- 1912 Opening of Commonwealth Bank. First payments of Maternity Bonus. First sod turned at Port Augusta of Trans-Australian Railway (Port Augusta to Kalgoorlie). Gift of £1,000,000 to charities by Mrs. Walter Hall, Sydney, N.S.W.
- 1913 Arrival of battle cruiser *Australia*, and cruisers *Melbourne* and *Sydney*. Federal Capital named Canberra and foundation stone laid. Appointment of Interstate Commission.
- 1914 Visit of General Sir Ian Hamilton to report on military defence scheme. Double dissolution of Federal Parliament. Visit of British Association for the Advancement of Science.
European War. Australian Navy transferred to Imperial Navy. Australian troops offered to, and accepted by Imperial Government. Captured vessels added to Australian fleet. Submarine AEL lost at sea whilst on service in the vicinity of New Britain. German Pacific possessions seized by Australian expeditionary force (military and naval). German Cruiser *Emden* destroyed at North Cocos Island by H.M.A.S. *Sydney*.

Year.

- 1915 Opening of Broken Hill Proprietary's Ironworks at Newcastle, N.S.W. Navy Department created.
- Australian troops landed at Gallipoli on 25th April. Loss of Submarine AE2 in operations at the Dardenelles. Census taken of Wealth and Income, and of males in Australia between ages of 17 and 60. Australian troops withdrawn from Gallipoli on 19th December.
- 1916 Record wheat harvest (180,000,000 bushels). Australian mounted troops operate in Egypt; afterwards join Desert Mounted Column. Other Australian troops transferred to France. Visit of Rt. Hon. W. M. Hughes, P.C., K.C., Prime Minister, to Canada, Great Britain, and South Africa, and to troops in England and France. Acquisition of steamships by the Commonwealth. First Military Service Referendum.
- 1917 National Ministry formed. General strike. Kalgoorlie-Port Augusta railway completed. Second Military Service Referendum.
- 1918 Population of Australia reaches 5,000,000. Australian troops in France formed into an Army Corps, commanded by Lieut.-Gen. Sir John Monash. Cessation of hostilities and surrender of Germany. Repatriation Department created. Australia House (Strand, London) opened by the King. Deaths of Sir G. H. Reid and of Lord Forrest of Bunbury.
- 1918-1919 Visit to America and Europe of Rt. Hon. W. M. Hughes, P.C., K.C., Prime Minister, representative at Peace Conference.
- 1919 Epidemic of influenza. Aerial flight England to Australia by Capt. Sir Ross Smith and Lieut. Sir Keith Smith. Death of Hon. Alfred Deakin. Visit to Australia of General Sir W. Birdwood. Visit of Admiral Lord Jellicoe.
- 1920 Visit to Australia of H.R.H. the Prince of Wales. Aerial flight England to Australia by Lieuts. Parer and McIntosh. Deaths of Rt. Hon. Sir Edmund Barton and of Rt. Hon. Sir Samuel Griffith.
- 1921 Visit to Imperial Conference of Rt. Hon. W. M. Hughes, P.C., K.C., Prime Minister. Second Commonwealth Census. Germany's indemnity fixed (Australia's share approximately £63,000,000). Visit of Senator Pearce (Minister for Defence) to Disarmament Conference at Washington. Colliery disaster at Mt. Mulligan, Queensland—75 lives lost. Mandate given to Australia over Territory of New Guinea. First direct wireless press message, England to Australia.
- 1922 Economic Conference at Sydney. First lock on River Murray opened at Blanchetown, South Australia. Queensland Legislative Council abolished.
- 1923 Rt. Hon. S. M. Bruce, P.C., M.C., Prime Minister. Premiers' Conference, Melbourne. First sod, site of Federal Parliament House at Canberra, turned. Pan-Pacific Science Congress, Melbourne. Police dispute in Melbourne, with accompanying riots.
- 1923-24 Visit of Rt. Hon. S. M. Bruce, P.C., M.C., Prime Minister, to Imperial Conference, London, and afterwards to European and Gallipoli battlefields (September, 1923, to March, 1924).
- 1924 H.M.A.S. *Australia* sunk. Sea-plane flight round Australia by Wing-Commander Goble and Lieut. McIntyre. British Empire Exhibition at Wembley. First sale of land leases at Canberra. Visit of British cruiser squadron. Directorate of Commonwealth Bank appointed. Loan by British Government of £34,000,000 for Imperial migration.
- 1925 Visit of American fleet. Solar Observatory established at Canberra. De Pinedo's flight, Rome to Australia and return. Brisbane-Kyogle railway commenced. North Shore (Sydney) Bridge commenced. Department of Markets and Migration established.
- 1926 Population of Australia reached 6,000,000. Referendum—Industry and Commerce, Widening State Powers; proposals rejected. Council for Scientific and Industrial Research established. Cobham's flight, London to Australia and return. North-West Australia Commission established.

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- 1926-27 Visit to Imperial Conference of Rt. Hon. S. M. Bruce, P.C., M.C., Prime Minister; return via America. Equality in Dominion Status; new title for King.
- 1927 Transfer of Seat of Federal Government from Melbourne to Canberra. New Parliament House opened by H.R.H. the Duke of York.
- 1928 Aerial flights from England to Australia by Mr. Bert Hinkler (solo); from America to Australia, and from Australia to New Zealand and return by Messrs. Kingsford-Smith and Ulm, with navigator and wireless operator. Visit of British Economic Mission to report on the development of Australian resources. Referendum: State Debts. Commonwealth may take over State Debts; proposals affirmed. Empire Forestry Conference held in Australia.
- 1929 Arrival of H.M.A.S. *Canberra*. Disastrous floods in Tasmania entailing the loss of more than twenty lives. Timber Workers' Strike and Northern Coal-fields Lock-out. Death of the first Commonwealth Statistician, Sir George Knibbs. Memorial stone of National War Memorial unveiled at Canberra. Record flight of "Southern Cross" plane, Australia to U.K. by Capt. Kingsford Smith, Messrs. Ulm, Litchfield, and McWilliams, in under thirteen days. Perth centenary celebrated. Defeat of Bruce-Page Government. Right Hon. J. H. Scullin, P.C., Labour Prime Minister. Abolition of compulsory military training.
- 1930 Wireless phone service with other countries inaugurated. Miss Amy Johnson, first woman to fly solo from U.K. to Australia. East to west trans-Atlantic flight of Capt. Kingsford Smith and an international crew in "Southern Cross" plane. Visit to Imperial Conference of Right Hon. J. H. Scullin, P.C., Prime Minister. Record solo aerial flight of Capt. Kingsford Smith from England to Australia in 10½ days. First Australian—Right Hon. Sir Isaac Alfred Isaacs, P.C., K.C.M.G., Chief Justice of the High Court—appointed to the office of Governor-General of the Commonwealth.

OFFICIAL YEAR BOOK

OF THE

COMMONWEALTH OF AUSTRALIA, 1929,

AND EARLIER YEARS.

CHAPTER I.

DISCOVERY, COLONIZATION, AND FEDERATION OF AUSTRALIA.

§ 1. General.

Previous issues of the *Official Year Book* contained in this Chapter some account of the traditional ideas regarding the existence of a "Terra Australis," together with brief details relating to the discovery and annexation of the Australian continent, but it is not proposed to repeat this information in the present volume.

§ 2. Establishment of the Commonwealth of Australia.

1. General.—On the 1st January, 1901, the six colonies (now known as States) and the Northern Territory were federated under the name of the "Commonwealth of Australia." The dates of creation and the areas of its component parts, as determined on the final adjustment of their boundaries, are shown in the following table:—

THE COMMONWEALTH OF AUSTRALIA.—AREA, ETC., OF COMPONENT PARTS.

State.	Year of Formation into Separate Colony.	Present Area in Square Miles.	State.	Year of Formation into Separate Colony.	Present Area in Square Miles.
New South Wales(a)	1786	310,372(a)	Tasmania ..	1825	26,215
Victoria ..	1851	87,884	Northern Territory	1863	523,620
Queensland ..	1859	670,500			
South Australia ..	1834	380,070	(b) Area of the Commonwealth ...	..	2,974,581
Western Australia	1829	975,920			

(a) On the 1st January, 1911, the Federal Capital Territory embracing an area of 912 square miles was taken over by the Commonwealth from the State of New South Wales, and on 12th July, 1915, assent was given to an Act taking over a further area of 28 square miles at Jervis Bay; the area of that State therefore is now 309,432 square miles.

(b) The present Dominion of New Zealand became a separate colony in 1841. The addition of its area, 103,862 square miles, to the total shown in the table above, gives a total for Australasia of 3,078,443 square miles.

2. **Transfer of the Northern Territory to the Commonwealth.**—On the 7th December, 1907, the Commonwealth and the State of South Australia entered into an agreement for the surrender to and acceptance by the Commonwealth of the Northern Territory, subject to approval by the Parliaments of the Commonwealth and the State. This approval was given by the South Australian Parliament under the Northern Territory Surrender Act 1907 (assented to on the 14th May, 1908), and by the Commonwealth Parliament under the Northern Territory Acceptance Act 1910 (assented to on the 16th November, 1910). The Territory accordingly was transferred to the Commonwealth by proclamation on the 1st January, 1911.

3. **Transfer of the Federal Capital Territory to the Commonwealth.**—On the 18th October, 1909, the Commonwealth and the State of New South Wales entered into an agreement for the surrender to and acceptance by the Commonwealth of an area of 912 square miles as the seat of Government of the Commonwealth. In December, 1909, Acts were passed by the Commonwealth and New South Wales Parliaments approving the agreement, and on the 5th December, 1910, a proclamation was issued vesting the Territory in the Commonwealth on and from the 1st January, 1911. By the Jervis Bay Territory Acceptance Act 1915, which was assented to on 12th July, 1915, an area of 28 square miles at Jervis Bay, surrendered by New South Wales according to an agreement made in 1913, was accepted by the Commonwealth.

4. **Transfer of British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or *Papua*, finally annexed by the British Government in 1884. This territory was for a number of years administered by the Queensland Government, but was transferred to the Commonwealth by proclamation on the 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles.

5. **Transfer of Norfolk Island.**—Although administered for many years by the Government of New South Wales, this island was, until 1st July, 1914, a separate Crown colony. On that date it was taken over by the Federal Parliament as a territory of the Commonwealth.

§ 3. The Exploration of Australia.

A fairly complete, though brief, account of the Exploration of Australia was given in Year Book No. 2 (pp. 20 to 39), and a summary of the more important facts relating to the subject was embodied in this Chapter in succeeding issues, but it has been decided to omit this information from the present volume.

§ 4. The Constitutions of the States and of the Commonwealth.

Information regarding the development of the Constitutions of the various Colonies (now States), together with a brief history of the Federal movement in Australia, were embodied in this Chapter in preceding issues of the Official Year Book. In later issues, also, "The Commonwealth of Australia Constitution Act" was printed *in extenso*. This information cannot, however, be repeated in the present issue.

CHAPTER II.

PHYSIOGRAPHY.

§ 1. General Description of Australia.

1. **Geographical Position.**—(i) *General.* The Australian Commonwealth, which includes the island continent of Australia proper and the island of Tasmania, is situated in the Southern Hemisphere, and comprises in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes $113^{\circ} 9'$ E. and $153^{\circ} 39'$ E., while its northern and southern limits are the parallels of latitude $10^{\circ} 41'$ S. and $39^{\circ} 8'$ S., or, including Tasmania, $43^{\circ} 39'$ S. On its north are the Timor and Arafura Seas and Torres Strait—on its south the Southern Ocean and Bass Strait. The extreme points are “Steep Point” on the west, “Cape Byron” on the east, “Cape York” on the north, “Wilson’s Promontory” on the south, or, if Tasmania be included, “South-East Cape.”

(ii) *Tropical and Temperate Regions.* Of the total area of Australia nearly 40 per cent. lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is $23^{\circ} 30'$ S. (its mean value for 1929 is $23^{\circ} 26' 54.67''$), the areas within the tropical and temperate zones are approximately as follows:—

AUSTRALIA—AREAS OF TROPICAL AND TEMPERATE REGIONS.

(STATES AND TERRITORY PARTIALLY WITHIN TROPICS.)

Area.	Queensland.	Western Australia.	Northern Territory.	Total.
	Sq. Miles.	Sq. Miles.	Sq. Miles.	Sq. Miles.
Within Tropical Zone	359,000	364,000	426,320	1,149,320
Within Temperate Zone	311,500	611,920	97,300	1,020,720
Ratio of Tropical part to whole State ..	0.535	0.373	0.814	0.530
Ratio of Temperate part to whole State ..	0.465	0.627	0.186	0.470

Thus the tropical part is roughly about one-half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole of Australia (0.386).

2. **Area of Australia compared with Areas of other Countries.**—It is not always realized that the area of Australia is nearly as great as that of the United States of America, that it is four-fifths of that of Canada, that it is over one-fifth of the area of the whole of the British Empire, that it is more than three-fourths of the whole area of Europe, and that it is about 25 times as large as Great Britain and Ireland or Italy. This

great area, coupled with a limited population, renders the solution of the problem of Australian development a particularly difficult one. The areas of Australia and of certain other countries are given in the following table :—

AREA OF AUSTRALIA AND OF OTHER COUNTRIES.

Country.	Area.	Country.	Area.
	Sq. miles.		Sq. miles.
Continental Divisions—		AFRICA—continued.	
Europe	3,719,141	Portuguese East Africa ..	428,132
Asia	16,951,194	Tripolitania	386,103
Africa	11,412,329	Egypt	393,000
North and Central America		Tanganyika Territory ..	374,000
and West Indies ..	8,553,436	Abyssinia	350,000
South America	7,070,284	Nigeria and Protectorate..	335,700
Australasia and Polynesia	3,463,358	South-west Africa	332,400
		Northern Rhodesia ..	287,950
Total, exclusive of Arctic		Cyrenaica	285,640
and Antarctic Conts.	51,169,742	Bechuanaland Protectorate	275,000
		Madagascar	241,094
		Kenya Colony and Protec-	
		torate	225,100
Europe—			
Russia	1,625,518	North and Central America	
France	212,659	Canada	3,684,723
Spain (inc. possessions) ..	194,800	United States	3,026,789
Germany	181,720	Mexico	767,198
Sweden	173,154	Alaska	590,884
Norway	124,964	Newfoundland and Labra-	
Italy	119,710	dor	162,734
Great Britain and Northern		Nicaragua	51,660
Ireland	94,633		
Asia—		South America—	
Russia	6,616,403	Brazil	3,285,318
China and Dependencies ..	4,279,170	Argentine Republic ..	1,153,119
British India and Adminis-		Peru	532,047
tered Territories	1,094,300	Bolivia	514,155
Arabia and Autonomous		Colombia (exc. of Panama)	440,846
States	1,000,000	Venezuela	393,874
Feudatory Indian States..	711,032	Chile	290,084
Persia	628,000	Ecuador	109,978
Dutch East Indies	572,950		
Turkey	486,353	Australasia and Polynesia—	
Japan (and Dependencies)	265,129	Commonwealth of Australia	2,974,581
Afghanistan	245,000	Dutch New Guinea ..	160,692
Siam	200,148	New Zealand and Depen-	
		dencies	103,862
Africa—		Papua	90,540
French West Africa	1,447,259	Territory of New Guinea..	89,252
Anglo-Egyptian Sudan ..	1,008,100		
French Equatorial Africa	912,049	British Empire	13,355,426
Belgian Congo	918,000		
Algeria	847,552		
Angola	484,800		
South African Union ..	472,347		

The figures quoted in the table have, in most cases, been extracted from the Statesman's Year Book for 1929.

3. Areas of Political Subdivisions.—As already stated, Australia consists of six States and the Northern and Federal Capital Territories. The areas of these, and their proportions of the total of Australia, are shown in the following table :—

AUSTRALIA—AREA OF STATES AND TERRITORIES.

State or Territory.	Area.	Percentage on Total.
	Sq. miles.	%
New South Wales	309,432	10.40
Victoria	87,884	2.96
Queensland	670,500	22.54
South Australia	380,070	12.78
Western Australia	975,920	32.81
Tasmania	26,215	0.88
Northern Territory	523,620	17.60
Federal Capital Territory	940	0.03
Total	2,974,581	100.00

4. Coastal Configuration.—(i) *General*. There are no striking features in the configuration of the coast; the most remarkable indentations are the Gulf of Carpentaria on the north, and the Great Australian Bight on the south. The Cape York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1, an enumeration of the features of the coast-line of Australia was given (see pp. 60 to 68).

(ii) *Coast-line*. The lengths of coast-line, exclusive of minor indentations, of each State and of the whole continent, and the area per mile of coast-line, are shown in the following table :—

AUSTRALIA—COAST-LINE AND AREA PER MILE THEREOF.

State.	Coast-line.	Area per Mile of Coast-line.	State.	Coast-line.	Area per Mile of Coast-line.
	Miles.	Sq. miles.		Miles.	Sq. miles.
New South Wales(a)	700	443	South Australia..	1,540	247
Victoria	680	129	Western Australia	4,350	224
Queensland ..	3,000	223	Continent (b) ..	11,310	261
Northern Territory	1,040	503	Tasmania ..	900	29

(a) Including Federal Capital Territory.

(b) Area 2,948,366 square miles.

For the entire Commonwealth of Australia this gives a coast-line of 12,210 miles and an average of 244 square miles for one mile of coast-line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast-line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(iii) *Historical Significance of Coastal Names*. It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyts' Archipelago, in the Northern Territory, and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognized from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. Geographical Features of Australia.—In each of the earlier issues of this Year Book fairly complete information has been given concerning some special geographical element. The nature of this information and its position in the various Year Books can be readily ascertained on reference to the special index following the index to maps and graphs at the end of this work.

6. Fauna, Flora, Geology, and Seismology of Australia.—Special articles dealing with these features have appeared in previous Year Books, but limits of space naturally preclude their repetition in each volume. As pointed out in 5 *supra*, however, the nature and position of these articles can be readily ascertained from the special index.

7. Changing of German Place Names in Australia.—A list of German place and district names in Australia which were changed during the Great War appeared in Year Book No. 19, pages 50 and 51. Limitations of space, however, preclude its repetition in this issue.

§ 2. Climate and Meteorology of Australia.*

1. Introductory.—In preceding Year Books some account was given of the history of Australian meteorology, including reference to the development of magnetic observations and the equipment for the determination of various climatological records. (See Year Book No. 3, pp. 79, 80.) In Year Book No. 4, pp. 84 and 87, will be found a short sketch of the creation and organization of the Commonwealth Bureau of Meteorology, and a résumé of the subjects dealt with at the Meteorological Conference in 1907. Space will not permit of the inclusion of this matter in the present issue.

2. Meteorological Publications.—A list of the publications issued by the Central Meteorological Bureau is given in preceding Official Year Books. (See No. 22, pp. 40, 41.)

3. General Description of Australia.—A considerable portion (0.530) of three divisions of Australia is north of the tropic of Capricorn—that is to say, within the States of Queensland and Western Australia, and the Northern Territory, no less than 1,149,320 square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of Australia within the temperate zone, however, is 1,825,261 square miles; thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the “temperate” region is half as large again as the “tropical” (more accurately 1.588). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe, and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7,300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range.

On the coast, the rainfall is often abundant and the atmosphere moist, but in some portions of the interior it is very limited, and the atmosphere dry. The distribution of forest, therefore, with its climatic influence, is very uneven. In the interior, in places, there are fine belts of trees, but there are large areas also which are treeless, and where the air is hot and parching in summer. Again, on the coast, even so far south as latitude 35°, the vegetation is tropical in its luxuriance, and to some extent also in character. Climatologically, therefore, Australia may be said to present a great variety of features.

4. Meteorological Divisions.—(i) *General.* Reference to the divisions adopted by the Commonwealth Meteorologist will be found in preceding Official Year Books. (See No. 22, p. 41.)

* Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire.

(ii) *Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented hereinafter are as follows:—

SPECIAL CLIMATOLOGICAL STATIONS—AUSTRALIA.

Locality.	Height above Sea Level.	Latitude.		Longitude.	Locality.	Height above Sea Level.	Latitude.	
		S.	E.				S.	E.
	Feet.	deg. min.	deg. min.			Feet.	deg. min.	deg. min.
Perth ..	197	31 57	115 50	Darwin ..	97	12 28	130 51	
Adelaide ..	140	34 56	138 35	Daly Waters ..	691	16 16	133 23	
Brisbane ..	137	27 28	153 2	Alice Springs	1,926	23 38	133 37	
Sydney ..	138	33 52	151 12	Dubbo ..	870	32 18	148 35	
Melbourne ..	115	37 49	144 58	Laverton, W.A.	1,530	28 40	122 23	
Hobart ..	177	42 53	147 20	Coolgardie ..	1,389	30 57	121 10	

5. *Temperatures.*—(i) *Comparisons with other Countries.* In respect of Australian temperatures generally, it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa so far south as latitude 33°, while in Australia it reaches only so far south as latitude 30°, thus showing that, on the whole, Australia has latitude for latitude a more temperate climate than other places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included, for in the United States the 70° isotherm extends in several of the western States so far north as latitude 41°. In Europe, the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia, nearly the whole of the land area south of latitude 40° N. has a higher temperature than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or approximately double the Australian range.

Along the northern shores of Australia the temperatures are very equable. At Darwin, for example, the difference in the means for the hottest and coldest months is only 8.4°, and the extreme readings for the year, or the highest maximum in the hottest month and the lowest reading in the coldest month, show a difference of under 50°. Coming southward, the extreme range of temperature increases gradually on the coast, and in a more pronounced manner inland.

(ii) *Hottest and Coldest Parts.* A comparison of the temperatures recorded at coast and inland stations shows that, in Australia, as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds 120° in the shade, and during the dry winters the major portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds 100° continuously for days and weeks. The coldest part of Australia is the extreme south-east of New South Wales and extreme east of Victoria—the region of the Australian Alps. Here the temperature seldom, if ever, reaches 100° even in the hottest of seasons.

Tasmania as a whole enjoys a most moderate and equable range of temperature throughout the year, although occasionally hot winds may cross the Straits and cause the temperature to rise to 100° in the low-lying parts.

(iii) *Monthly Maximum and Minimum Temperatures.* The normal monthly maximum and minimum temperatures can be best shown by means of graphs, which exhibit the nature of the fluctuation of each for all available years. In the diagram herein for nine

representative places in Australia, the upper heavy curves show the mean maximum, and the lower heavy curves the mean minimum temperatures based upon daily observations, while the other curves show the humidities.

6. Humidity.—After temperature, humidity is the most important element of climate, as regards its effect on human comfort, rainfall supply, and in connexion with engineering problems generally.

In this publication the *absolute humidity* has been graphically represented in the form of inches of vapour pressure (i.e., that portion of the barometric pressure due to vapour). It is this total quantity of moisture in the air which affects personal comfort, plays an important part in varying the density of the atmosphere, and in heating and refrigerating processes. The more commonly quoted value, called the *relative humidity*, refers to the ratio which the actual moisture contents of the air bear to the total amount possible if saturation existed at the given temperature, and is usually quoted as a percentage. The relative humidity is an important factor in all drying operations, but is much less important than the absolute humidity as affecting animal life.

The mean monthly vapour pressure has also been added to the tables of climatological data for the capital cities included herein.

The normal monthly values of vapour pressure, it should be noted, combine to make the annual curve for this element which is comparable with the maximum and minimum temperature curves, but the relative humidities consisting as they do of the extremes for each month, do not show the normal annual fluctuation which would be approximately midway between the extremes.

The order of stations in descending values of vapour pressure is Darwin, Daly Waters, Brisbane, Sydney, Perth, Adelaide, Melbourne, Hobart and Alice Springs, while the relative humidity diminishes in the order, Sydney, Hobart, Darwin, Brisbane, Melbourne, Perth, Adelaide, Daly Waters and Alice Springs.

7. Evaporation.—(i) *General.* The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure, and movement. In Australia, the question is of perhaps more than ordinary importance, since in its drier regions water has often to be conserved in "tanks"* and dams. The magnitude of the economic loss by evaporation will be appreciated from the tabular records herein, which show that the yearly amount varies from about 32 inches at Hobart to 94 inches at Alice Springs in the centre of the Continent. Over the *inland* districts of the Continent it has been calculated that evaporation equals the rainfall where the annual totals are about 36 inches, the variations above and below this quantity being inverse.

(ii) *Monthly Evaporation Curves.* The curves showing the mean monthly evaporation in various parts of Australia disclose how characteristically different are the amounts for the several months in different localities. The evaporation for representative places is shown on the diagram herein.

(iii) *Loss by Evaporation.* In the interior of Australia the possible evaporation is greater than the actual rainfall. Since the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Further, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation. These matters are naturally of more than ordinary concern in the drier districts of Australia.

8. Rainfall.—(i) *General.* As even a casual reference to climatological maps indicating the distribution of rainfall and prevailing direction of wind would clearly show, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth's surface over which they blow, and by the physiographical features generally.

Australia lies within the zones of the south-east trades and prevailing westerly winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude, and, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains upon which the rain-laden winds blow from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast

*In Australia, artificial storage ponds or reservoirs are called "tanks."

of Western Australia, where the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly winds, which skirt the southern shores, are responsible for the very reliable, although generally light to moderate, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(ii) *Factors determining Distribution and Intensity of Rainfall.* (iii) *Time of Rainfall.* In Official Year Book No. 6 (see pp. 72 to 74) some notes were given of the various factors governing the distribution, intensity, and period of Australian rainfall.

(iv) *Wettest and Driest Regions.* The wettest known part of Australia is on the north-east coast of Queensland, between Port Douglas and Cardwell, where three stations situated on, or adjacent to, the Johnstone and Russell Rivers have an average annual rainfall of between 144 and 165 inches. The maximum and minimum falls there are:—Goondi, 241.53 in 1894 and 67.88 inches in 1915, or a range of 173.65 inches; Innisfail, 211.24 in 1894 and 69.87 inches in 1902, or a range of 141.37 inches; Harvey Creek, 254.77 in 1921 and 80.47 inches in 1902, or a range of 174.30 inches.

On four occasions more than 200 inches have been recorded at Goondi, the last of these being in 1910, when 204.82 inches were registered. The record at this station covers a period of 34 years.

Harvey Creek, in the shorter period of 26 years, has three times exceeded 200 inches, the total for 1921 being 254.77 inches, and at the South Johnstone Sugar Experiment Station, where a gauge has recently been established, 202.52 inches were recorded in 1921.

In Tasmania the wettest part is in the West Coast region, the mean annual rainfall at Lake Margaret being 146.66 inches, with a maximum of 175.12 inches in 1924.

The driest known part of the continent is in the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is only 5 inches, and where the fall rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia were at one time regarded as the driest part of Australia, but authentic observations in recent years over settled districts in the east of that State show that the annual average is from 10 to 12 inches.

(v) *Quantities and Distribution of Rainfall.* The departure from the normal rainfall increases progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent subject to capricious monsoonal rains, as the comparisons hereunder will show. The general distribution is best seen from the rainfall map herein, which shows the areas subject to average annual rainfalls lying between certain limits. The areas enjoying varying quantities of rainfall determined from the latest available information are shown in the following table:—

AVERAGE ANNUAL RAINFALL DISTRIBUTION.

Average Annual Rainfall.	N.S.W. (a)	Victoria.	Queens- land.	South Australia	Northern Territory	Western Australia.	Tas- mania. (b)	Total. (b)
	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.
Under 10 inches	48,749	nil	80,496	310,660	140,500	486,952	nil	1,067,357
10—15 "	78,454	19,270	81,549	36,460	132,780	255,092	nil	603,605
15—20 "	55,762	13,492	111,833	19,940	63,026	94,101	304	358,458
20—25 "	45,140	14,170	143,610	8,620	49,157	44,340	3,844	308,881
25—30 "	30,539	15,579	99,895	3,258	41,608	31,990	3,016	225,885
30—40 "	33,557	14,450	61,963	1,036	37,642	59,520	5,027	213,195
Over 40 "	18,171	10,923	91,154	96	58,907	3,925	11,247	194,423
Total area ..	310,372	87,884	670,500	380,070	523,620	975,920	23,438	2,971,804

(a) Including Federal Capital Territory. (b) Over an area of 2,777 square miles no records are available.

Referring first to the capital cities, the records of which are given in the next table, it will be seen that Sydney, with a normal rainfall of 47.84 inches, occupies the chief place; Brisbane, Perth, Melbourne, Hobart and Adelaide following in that order. Adelaide with 21.12 inches being the driest. The extreme range from the wettest to the driest year is greatest at Brisbane (72.09 inches) and least at Adelaide (19.48 inches).

In order to show how the rainfall is distributed throughout the year in various parts of the continent, the figures for representative towns have been selected. (See map.)

The figures for Darwin, typical of the Northern Territory, show that nearly the whole of the rainfall occurs there in the summer months, while little or none falls in the middle of the year. The figures for Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October for the former, and in November for the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with a maximum in the autumn; the averages during the last six months are fair, and moderately uniform. Generally it may be said that approximately one-third of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 or more inches, the remaining two-thirds averaging from 5 to 20 inches.

(vi) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are clearly indicated in the graphs herein. Inspection thereof will show how large is the evaporation when water is fully exposed to the direct rays of the sun and to wind.

(vii) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions. The capitals are dealt with in the order in which they occur in the adopted meteorological divisions.

RAINFALL—AUSTRALIAN CAPITAL CITIES, 1901 TO 1929.

Year.	PERTH.			ADELAIDE.			BRISBANE.			SYDNEY.			MELBOURNE.			HOBART.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.			in.			in.			in.			in.			in.		
1901	36.75	122	..	18.01	124	..	38.48	110	..	40.10	149	..	27.45	113	..	25.11	149	..
2	27.06	93	..	16.02	123	..	16.17	87	..	43.07	180	..	23.08	102	..	21.85	150	..
3	35.69	140	..	25.47	134	..	49.27	136	..	38.62	173	..	28.43	130	..	25.86	139	..
4	34.85	125	..	20.31	117	..	33.23	124	..	45.93	158	..	29.72	128	..	22.41	139	..
5	34.61	116	..	22.28	131	..	36.76	108	..	35.03	145	..	25.64	129	..	32.09	168	..
6	32.37	121	..	26.51	127	..	42.85	125	..	31.89	160	..	22.29	114	..	23.31	155	..
7	40.12	132	..	17.78	125	..	31.46	119	..	31.32	132	..	22.26	102	..	25.92	166	..
8	30.52	106	34.05	24.56	125	21.15	44.01	125	36.55	45.65	167	43.41	17.72	130	25.36	16.50	148	23.20
9	39.11	107	..	27.69	138	..	34.06	111	..	32.45	177	..	25.86	171	..	27.29	170	..
1910	37.02	135	..	24.62	116	..	49.00	133	..	46.91	160	..	24.61	167	..	25.22	205	..
11	23.38	108	..	15.99	127	..	35.21	128	..	50.24	155	..	36.61	168	..	26.78	193	..
12	27.85	123	..	19.57	116	..	41.30	114	..	47.51	172	..	20.37	157	..	23.14	181	..
13	38.28	141	..	18.16	102	..	40.81	115	..	57.70	141	..	21.17	157	..	19.36	165	..
14	20.21	128	..	11.39	91	..	33.99	141	..	56.42	149	..	18.57	129	..	15.42	154	..
15	43.61	164	..	19.38	117	..	25.66	93	..	34.83	117	..	20.95	167	..	20.91	196	..
16	35.16	128	..	28.16	142	..	52.80	136	..	44.91	161	..	38.04	170	..	43.39	203	..
17	45.64	146	..	28.90	153	..	40.92	127	..	52.40	151	..	30.57	171	..	30.62	214	..
18	39.58	138	34.98	17.41	107	21.13	24.95	121	37.87	42.99	149	46.64	27.13	160	26.39	26.04	179	25.82
19	30.66	120	..	17.21	108	..	19.36	96	..	58.71	152	..	24.89	141	..	22.48	153	..
20	40.35	124	..	26.70	119	..	39.72	122	..	43.42	159	..	28.27	162	..	18.00	182	..
21	41.09	135	..	22.64	100	..	54.31	167	..	43.34	140	..	29.76	154	..	18.04	159	..
22	31.86	135	..	23.20	117	..	35.82	109	..	39.35	136	..	25.02	151	..	28.27	189	..
23	44.47	134	..	29.79	139	..	28.27	93	..	37.01	123	..	22.64	158	..	32.93	198	..
24	33.79	119	..	23.44	143	..	41.08	114	..	37.01	136	..	36.48	171	..	23.76	197	..
25	31.41	126	..	21.91	118	..	53.10	139	..	50.35	145	..	17.57	144	..	22.40	171	..
26	49.22	167	..	22.20	116	..	30.82	111	..	37.07	127	..	20.81	149	..	25.79	187	..
27	36.59	133	..	16.92	101	..	62.08	130	..	48.58	138	..	17.98	135	..	20.02	183	..
28	44.88	140	38.43	19.43	107	22.34	52.64	145	41.22	40.07	130	43.49	24.09	151	24.75	30.23	205	24.66
29	36.77	172	..	17.51	119	..	39.78	118	..	57.90	129	..	28.81	168	..	26.55	194	..
Aver.	34.61	121	..	21.12	123	..	45.15	128	..	47.84	152	..	26.05	138	..	23.88	151	..
No. of Yrs.	54	54	..	91	91	..	80	70	..	90	90	..	86	74	..	87	87	..

NOTE.—The above average rainfall figures for Brisbane, Sydney, Melbourne and Hobart differ slightly from the mean annual falls given in the Climatological Tables, which are for a less number of years. Annual totals from 1860 to 1900 inclusive will be found in Official Year Book No. 15, page 53.

9. Remarkable Falls of Rain.—The following are the most remarkable falls of rain in the various States and in the Northern Territory which have occurred within a period of twenty-four hours. In New South Wales and Queensland falls of less than 20 inches in the twenty-four hours have not been included. For other very heavy falls at various localities reference may be made to Official Year Book No. 14, pp. 60 to 63 and No. 22, pp. 46 to 48:—

HEAVY RAINFALLS—NEW SOUTH WALES, UP TO 1929, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Broger's Creek ..	14 Feb., 1898	20.05	Towamba ..	5 Mar., 1893	20.00
" ..	13 Jan., 1911	20.83	South Head (near		
Cordeaux River ..	14 Feb., 1898	22.58	Sydney) ..	29 Apr., 1841	20.12
Morpeth ..	9 Mar., 1893	21.52	" ..	16 Oct., 1844	20.41

HEAVY RAINFALLS—QUEENSLAND, UP TO 1929, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Babinda (Cairns) ..	1 Feb., 1913	20.51	Mackay ..	21 Jan., 1918 ^a	24.70
" ..	24 Jan., 1916	22.30	Macnade Mill ..	6 " 1901	23.33
Buderim Mountain	11 " 1898	26.20	" ..	4 Mar., 1915	22.00
Cairns ..	2 Apr., 1911	20.16	Mooloolah ..	13 " 1892	21.53
Carbrook ..	23 Jan., 1918	22.66	Mount Molloy ..	31 " 1911	20.00
Crohamhurst			" ..	1 Apr., "	20.00
(Blackall Range)	2 Feb., 1893	35.71	" ..	2 " "	20.00
Dungeness ..	16 Mar., 1893	22.17	Nambour ..	9 Jan., 1898	21.00
Goondi ..	30 Jan., 1913	24.10	Plane Creek		
Harvey Creek ..	3 " 1911	27.75	(Mackay) ..	26 Feb., 1913	27.73
" ..	31 " 1913	24.72	Port Douglas ..	1 Apr., 1911	31.63
Innisfail (formerly			Sarina ..	23 Jan., 1918	22.60
Geraldton) ..	29 Dec., 1903	21.22	Tully ..	12 Feb., 1927	23.86
" ..	7 Apr., 1912	20.50	Woodlands (Yepp'n)	31 Jan., 1893	23.07
" ..	31 Jan., 1913	20.91	Yandina ..	1 Feb., 1893	20.08
Kamerunga (Cairns)	2 Apr., 1911	21.00	Yarrabah ..	2 Apr., 1911	30.65
Koumala ..	23 Jan., 1918	22.31	" ..	24 Jan., 1916	27.20
" ..	24 " "	20.65	Yeppoon ..	31 " 1893	20.05
Kuranda (Cairns) ..	1 Apr., 1911	24.30	" ..	8 Oct., 1914	21.70
" ..	2 " "	28.80			

^a 37½ hours.

HEAVY RAINFALLS—WESTERN AUSTRALIA, UP TO 1929, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balla Balla ..	21 Mar., 1899	14.40	Fortescue ..	3 May, 1890	23.36
Boodarie ..	21 Jan., 1896	14.53	Frazier Downs ..	3 Mar., 1916	11.25
Broome ..	6 " 1917	14.00	Gnaraloo ..	20 " 1923	11.00
Cossack ..	3 Apr., 1898	12.82	Kerdidary ..	7 Feb., 1901	12.00
" ..	16 " 1900	13.23	Minilya ..	15 Jan., 1923	11.50
Croydon ..	3 Mar., 1903	12.00	Mundabullangana	12 Feb., 1929	12.05
Derby ..	29 Dec., 1898	13.09	Obagama ..	23 Feb., 1910	12.00
" ..	7 Jan., 1917	16.47	" ..	24 Dec., 1920	13.02
Exmouth Gulf ..	2 Feb., 1918	12.50	Pilbara ..	2 Apr., 1898	14.04

HEAVY RAINFALLS, WESTERN AUSTRALIA—*continued.*

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Point Torment ..	17 Dec., 1906	11.86	Thangoc ..	28 Dec., 1898	11.15
Port George IV. ..	17 Jan., 1915	11.24	Whim Creek ..	3 Apr., 1898	29.41
Roebourne ..	3 Apr., 1898	11.44	" ..	21 Mar., 1899	18.17
Roebuck Plains ..	5 Jan., 1917	14.01	Winderrie ..	17 Jan., 1923	14.23
" ..	6 " "	22.36	Woodstock ..	21 " 1912	13.00
Springvale ..	14 Mar., 1922	12.25	Wyndham ..	27 " 1890	11.60
Tambray ..	6 " 1900	11.00	" ..	4 Mar., 1919	12.50
Thangoc ..	17-19 Feb., '96	24.18	Yeeda ..	7 Jan., 1917	11.75

HEAVY RAINFALLS—NORTHERN TERRITORY, UP TO 1929, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Bathurst Island ..			Cosmopolitan Gold Mine ..	24 Dec., 1915	10.60
Mission ..	7 Apr., 1925	11.85	Darwin ..	7 " "	11.67
Bonrook ..	24 Dec., 1915	10.60	Groote Eylandt ..	30-31 Mar., '23	12.00a
Borrooloola ..	14 Mar., 1899	14.00	Lake Nash ..	21 Mar., 1901	10.25
Brock's Creek ..	4 Jan., 1914	10.68	Pine Creek ..	8 Jan., 1897	10.35
" ..	24 Dec., 1915	14.33			
Burrundie ..	4 Jan., 1914	11.61			

(a) Approximate only, as gauge was washed away.

HEAVY RAINFALLS—SOUTH AUSTRALIA, UP TO 1929, INCLUSIVE.

Name of Town or Locality.	Date.	Amount.
		ins.
Wilmington {	28 Feb., 1921 ..	3.97
	1 Mar., 1921 ..	7.12

HEAVY RAINFALLS—VICTORIA, UP TO 1929, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balook ..	26 Sept., 1917	5.32	Kerang ..	18 Jan., 1928	4.93
" ..	27 " "	7.23	Mt. Buffalo ..	6 June, 1917	8.53
" ..	28 " "	2.08	" ..	7 " "	6.56

HEAVY RAINFALLS—TASMANIA, UP TO 1929, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Cullenswood ..	5 June, 1923	10.50	Mathinna ..	5 Apr., 1929	13.25
" ..	5 Apr., 1929	11.12	Riana ..	5 " 1929	11.08
Gould's Country ..	8-10 Mar., '11	15.33	Riversdale ..	27 " 1928	5.90
" ..	5 Apr., 1929	12.13	The Springs ..	30-31 Jan., '16	10.75
Lottah ..	8-10 Mar., '11	18.10	Triabunna ..	5 June, 1923	10.20
Mathinna ..	8-10 " "	15.79			

10. **Snowfall.**—Light snow has been known to fall occasionally so far north as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons, it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria so far north as Toowoomba in Queensland. During the winter, for several months, snow covers the ground to a great extent on the Australian Alps, where also the temperature falls below zero Fahrenheit during the night. In the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with the most pronounced and extensive snowfalls. The barometric gradients are very steep where the "trough line" extends northward, and the apexes are unusually sharp-pointed, and protrude into very low latitudes, sometimes even to the tropics.

11. **Hail.**—Hail falls most frequently along the southern shores of the continent in the winter, and over south-eastern Australia during the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. A summer rarely passes without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanized iron bear evidence of the weight and penetrating power of the stones.

The hailstorms occur most frequently when the barometric readings indicate a flat and unstable condition of pressure. They are almost invariably associated with tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

12. **Barometric Pressures.**—The mean annual barometric pressure (corrected to sea-level and standard gravity) in Australia varies from 29.80 inches on the north coast to 29.92 inches over the central and 30.03 inches in the southern parts of the continent. In January, the mean pressure ranges from 29.70 inches in the northern and central areas to 29.95 inches in the southern. The July mean pressure ranges from 29.90 inches at Darwin to 30.12 inches at Alice Springs. Barometer readings corrected to mean sea-level and standard gravity have, under anticyclonic conditions in the interior of the continent, ranged as high as 30.77 inches (at Kalgoorlie on the 28th July, 1901) and have fallen as low as 27.55 inches. This lowest record was registered at Mackay during a tropical hurricane on the 21st January, 1918. An almost equally abnormal reading of 27.88 inches was recorded at Innisfail during a similar storm on the 10th March, 1918. The mean annual fluctuations of barometric pressure for the capitals of Australia are shown on the graph herein.

13. **Wind.**—Notes on the distinctive wind currents in Australia were given in preceding Year Books (see No. 6, page 83), but, owing to limitations of space, have not been included herein.

14. **Cyclones and Storms.**—The "elements" in Australia are ordinarily peaceful, and while destructive cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months, the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Strait, including the coast line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, or in that part of them which has a north-westerly to a south-westerly circulation.

The north-east coast of Queensland is occasionally visited by hurricanes from the north-east tropics. During the first four months of the year, these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve first to the S.W. and finally towards the S.E. Only a small percentage, however, reach Australia, the majority recurving in their path to the east of New Caledonia.

Very severe cyclones, locally known as "willy willies," are peculiar to the north-west coast of Western Australia from the months of November to April inclusive. They apparently originate in the ocean in the vicinity of Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these

storms, like those from the north-east tropics, are very violent and destructive, and cause great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coastline, or cross the continent to the Great Australian Bight. When they take the latter course, their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded in 24 hours at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the northern interior of Western Australia from similar storms.

Some further notes on severe cyclones and on "southerly bursters," a characteristic feature of the eastern part of Australia, will be found in previous issues of the Official Year Book (see No. 6, pp. 84, 85, 86).

A special article dealing with "Australian Hurricanes and Related Storms" appeared in Official Year Book No. 16, pp. 80-84.

15. *Influences affecting Australian Climate.*—(i) *General.* Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes have, however, taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shows a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great increase of residential and manufacturing buildings within the city and in the surrounding suburbs. Again, low-lying lands on the north coast of New South Wales, which originally were seldom subject to frosts, have, with the denudation of the surrounding hills from forests, experienced annual visitations, the probable explanation being that through the absence of trees the cold air of the high lands now flows unchecked and untempered down the sides of the hills to the valleys and lower lands.

(ii) *Influence of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalizing one; thus, especially in equatorial regions, and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of shade temperatures by altering the extent of radiating surface by evaporation, and by checking the movement of air, and while decreasing evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain and the washing away of surface soil, and when a region is protected by trees, a steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall, the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the case of the inland rivers, the River Murray, for example, which has never been known to become dry, deriving its steadiness of flow mainly through the causes indicated.

(iii) *Direct Influence of Forests on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others take the opposite view.

Sufficient evidence exists, however, to prove that, even if the rainfall has not increased, the beneficial climatic effect of forest lands more than warrants their protection and extension. Rapid rate of evaporation, induced by both hot and cold winds, injures crops and makes life uncomfortable on the plains, and, while it may be doubted that the forest aids in increasing precipitation, it must be admitted that it does check winds and the rapid evaporation due to them. Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of the treeless interior of Australia. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.

In previous issues some notes on observations made in other countries were added (see Official Year Book No. 6, pp. 86 and 95).

16. *Rainfall and Temperatures, Various Cities.*—The following table shows rainfall and temperature for various important cities throughout the world, for the Federal capital, and for the capitals of the Australian States.

RAINFALL AND TEMPERATURE—VARIOUS CITIES.

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.					
		Average.	Highest.	Lowest.	(a) Mean Summer.	(b) Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Amsterdam ..	6	27.29	40.59	17.60	63.2	36.8	90.0	4.1	64.4	35.4
Auckland ..	125	43.88	74.15	26.32	66.2	52.5	91.0	31.9	67.1	51.8
Athens ..	351	15.48	33.33	4.56	79.2	49.1	109.4	19.6	81.0	47.4
Bergen ..	72	77.09	111.68	44.49	56.8	34.2	83.5	4.8	57.9	33.6
Berlin ..	161	22.72	30.04	14.25	64.8	33.0	98.6	-13.0	66.0	31.8
Borne ..	1,877	36.30	53.23	24.69	62.2	30.1	91.4	-3.6	64.4	28.0
Bombay ..	37	71.15	114.89	33.41	83.5	75.1	100.0	55.9	84.8	74.2
Breslau ..	482	22.52	32.56	16.50	64.1	33.5	100.0	-23.4	65.5	29.3
Brussels ..	323	23.35	41.18	17.73	62.6	36.0	95.5	-4.4	63.7	34.5
Budapest ..	500	25.20	35.23	16.79	68.6	30.2	98.6	-5.1	70.4	28.2
Buenos Ayres ..	82	38.78	79.72	20.04	72.7	50.9	103.1	22.3	73.8	50.0
Calcutta ..	21	61.82	98.48	38.43	85.6	68.0	104.2	44.2	86.0	66.4
Capetown ..	40	25.60	36.72	17.71	68.1	54.7	102.0	34.0	68.8	53.9
Caracas ..	3,420	30.03	47.36	23.70	68.3	65.3	87.8	48.2	69.2	63.7
Chicago ..	823	33.23	45.86	24.52	70.0	26.1	103.0	-23.0	72.4	23.7
Christchurch ..	25	25.16	35.30	13.54	61.3	43.3	95.7	-21.3	61.6	42.4
Christiana (Oslo) ..	75	23.23	32.21	16.26	61.0	24.5	95.0	-21.1	62.6	23.9
Colombo ..	40	83.83	139.70	51.60	81.5	79.9	95.8	65.0	82.6	79.1
Constantinople ..	245	28.75	42.74	14.78	74.0	43.5	103.6	-13.0	75.7	42.0
Copenhagen ..	10	20.79	25.83	15.47	60.4	33.3	85.5	-3.3	61.9	32.4
Dresden ..	115	26.80	34.49	17.72	62.9	32.4	93.4	-15.3	64.4	31.6
Dublin ..	47	27.66	35.56	16.60	69.4	42.0	87.2	13.3	60.5	41.7
Dunedin ..	300	36.96	54.51	22.15	56.3	42.6	94.0	23.0	67.0	41.5
Durban ..	260	40.79	71.27	27.24	75.6	64.4	110.6	41.1	76.7	63.8
Edinburgh ..	441	25.21	32.05	16.44	55.8	38.8	87.7	5.0	57.2	38.3
Geneva ..	1,328	33.43	46.89	21.14	64.4	33.7	94.5	..	66.2	32.2
Genoa ..	157	51.29	108.22	28.21	73.8	46.8	94.5	16.7	75.4	45.5
Glasgow ..	184	38.49	56.18	29.05	52.7	41.0	84.9	6.6	53.0	38.4
Greenwich ..	149	23.50	35.54	16.38	62.0	39.5	100.0	6.9	63.5	38.5
Hong Kong ..	109	84.28	119.72	45.84	86.2	64.8	97.0	32.0	86.7	62.9
Johannesburg ..	5,750	31.63	50.00	21.66	65.4	54.4	94.0	23.3	68.2	43.9
Leipzig ..	384	24.69	31.37	17.10	63.1	31.5	97.3	-14.8	64.8	30.6
Leningrad ..	16	21.30	29.52	13.75	61.1	17.4	97.0	-38.2	63.7	15.2
Lisbon ..	312	29.18	52.79	17.32	69.6	51.3	94.1	32.5	70.2	49.6
London (Kew) ..	18	23.80	38.20	16.04	61.2	39.8	94.0	9.4	62.7	38.9
Madras ..	22	49.85	88.41	18.45	89.0	76.8	113.0	57.5	89.9	76.1
Madrid ..	2,149	16.23	27.48	9.13	73.0	41.2	107.1	10.5	75.7	39.7
Marseilles ..	246	22.24	43.03	12.28	70.5	45.3	100.4	11.7	72.3	44.6
Moscow ..	526	18.94	29.28	12.07	63.4	14.7	99.5	-44.5	66.1	11.9
Naples ..	489	34.00	56.58	21.75	73.6	48.0	99.1	23.9	75.4	46.8
New York ..	314	44.63	58.68	33.17	71.4	31.8	102.0	-13.0	73.5	30.2
Ottawa ..	236	33.40	53.79	25.63	67.2	14.1	98.0	-33.0	69.7	12.0
Paris ..	164	22.64	29.57	16.46	63.5	37.2	101.1	-14.1	64.9	36.1
Pekin ..	143	24.40	36.00	18.00	77.7	26.6	114.0	-5.0	79.2	23.6
Quebec ..	296	40.50	53.79	32.12	63.5	12.4	96.0	-34.0	66.3	10.1
Rome ..	166	32.57	57.89	12.72	74.3	46.0	104.2	17.2	76.1	44.6
San Francisco ..	155	22.27	38.82	9.00	58.3	50.5	101.0	29.0	59.3	49.5
Shanghai ..	21	45.00	62.52	27.92	78.0	41.1	102.9	10.2	80.4	37.8
Singapore ..	8	91.99	158.68	32.71	81.2	78.6	94.2	63.4	81.5	73.8
Stockholm ..	144	19.09	28.27	11.81	59.5	27.3	96.8	-25.6	61.9	26.4
Tokio ..	65	61.45	86.37	45.72	74.8	39.2	97.9	17.2	77.7	37.5
Trieste ..	85	42.94	63.14	26.57	73.9	41.3	99.5	14.0	76.3	39.9
Vienna ..	663	24.50	33.90	16.50	65.7	30.4	97.7	-8.0	67.1	23.0
Vladivostok ..	55	19.54	33.60	9.39	63.9	11.0	95.7	-21.8	69.4	6.1
Washington ..	112	43.50	61.33	30.85	74.7	34.5	106.0	-15.0	76.8	32.9
Wellington (N.Z.) ..	10	48.65	67.68	27.83	61.8	48.6	88.0	23.6	62.5	47.7
Zürich ..	1,542	45.15	78.27	29.02	63.3	31.3	94.1	-0.8	65.1	29.5

FEDERAL CAPITAL.

					(a)	(b)				
Canberra ..	1,837	22.87	33.71	16.31	67.9	43.8	102.6	14.0	68.6	42.4

STATE CAPITALS.

					(a)	(b)				
Perth ..	197	34.61	49.22	20.21	72.8	56.0	108.4	34.2	73.9	55.2
Adelaide ..	140	21.12	30.87	11.39	73.0	53.1	116.3	32.0	74.0	51.8
Brisbane ..	137	45.32	88.26	16.17	76.6	59.7	108.9	36.1	77.2	58.5
Sydney ..	138	47.52	82.76	21.49	71.0	64.2	108.5	35.9	71.6	52.7
Melbourne ..	115	25.49	38.04	15.61	66.6	50.0	111.2	27.0	67.6	48.7
Hobart ..	177	23.88	48.39	13.43	61.5	46.9	105.2	27.0	62.3	45.7

(a) Mean of the three hottest months.

(b) Mean of the three coldest months.

17. Climatological Tables.—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals up to and including the year 1929. These are given in the following tables:—

CLIMATOLOGICAL DATA—PERTH, WESTERN AUSTRALIA.

LAT. 31° 57' S., LONG. 115° 50' E. HEIGHT ABOVE M.S.L. 197 Ft.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M.S. Sea level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. and 3 p.m.	No. of Clear Days.
		Greatest Number of Miles in One Day.	Mean Hourly Pressure. (lb.)	Total Miles.	Prevailing Direction. 9 a.m. 3 p.m.				
No. of yrs. over which observation extends	45	32	31	32	32	31	32	33	33
January ..	29.908	797 27/98	0.68	11,167	S	10.41	1.5	2.9	14.0
February ..	29.923	650 6/08	0.61	9,705	S S E	8.57	1.4	3.2	11.7
March ..	29.986	651 6/13	0.53	9,930	S S E	7.60	1.4	3.6	11.7
April ..	30.073	955 25/00	0.39	8,241	S E	4.74	1.3	4.6	8.0
May ..	30.069	768 5/12	0.36	8,141	E N E	2.75	2.2	5.6	5.4
June ..	30.059	914 19/27	0.36	7,913	N N E	1.77	2.1	6.2	3.5
July ..	30.090	1,015 20/20	0.40	8,548	N N E	1.75	2.3	5.8	5.0
August ..	30.087	966 15/03	0.42	8,772	W	2.37	1.5	5.6	5.2
September ..	30.063	864 11/05	0.46	8,889	S W	3.33	1.4	5.4	6.0
October ..	30.028	809 6/16	0.52	9,840	S S W	5.25	0.9	5.2	5.9
November ..	29.990	777 18/97	0.58	10,021	S	7.62	1.3	4.2	8.3
December ..	29.925	776 6/22	0.64	10,901	S	9.81	1.7	3.3	12.3
Year { Totals ..	—	—	—	—	—	65.97	19.0	—	97.0
Year { Averages ..	30.017	—	0.50	9,339	S	—	—	4.6	—
Year { Extremes ..	—	1,015 20/7/26	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Max.	Mean.	Min.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	33	33	33	33	33	33	31	31	32
January ..	84.4	63.0	73.7	108.4 28/21	48.6 20/25	58.5	177.3 22/14	40.4 1/21	320.7
February ..	84.6	62.3	73.9	107.4 4/23	47.7 1/02	59.7	169.0 4/99	39.8 1/21	270.6
March ..	81.1	60.9	71.0	106.4 14/22	45.3 8/03	60.6	167.0 19/18	36.7 8/03	266.5
April ..	76.1	57.2	66.6	99.7 9/10	39.3 20/14	60.4	157.0 8/16	31.0 20/14	217.5
May ..	68.7	52.5	70.6	90.4 2/07	34.3 11/14	56.1	142.2 8/24	25.3 11/14	175.3
June ..	64.0	49.5	59.8	81.7 2/14	35.0 30/20	46.7	135.5 9/14	26.5 30/20	142.9
July ..	62.6	47.7	55.2	76.4 21/21	34.2 7/16	42.2	133.2 13/15	25.1 30/20	164.5
August ..	63.7	48.2	55.9	81.0 12/14	35.3 31/08	45.7	145.1 29/21	27.9 10/11	185.2
September ..	66.2	50.2	58.2	90.9 30/18	38.9 17/13	52.0	153.6 29/16	29.2 21/16	205.7
October ..	69.1	52.5	60.8	95.3 30/22	40.5 5/24	54.8	154.0 29/14	30.5 4/17	235.6
November ..	75.7	56.7	66.2	104.6 24/13	42.0 1/04	62.6	167.0 30/25	35.5 (b)	237.0
December ..	81.0	60.6	70.8	107.9 20/04	48.0 2/10	59.9	168.7 25/15	39.0 12/20	324.3
Year { Averages ..	73.1	55.1	64.1	—	—	—	—	—	2795.8
Year { Extremes ..	—	—	—	108.4 28/1/21	34.2 7/7/16	74.2	177.3 22/1/14	25.1 30/7/20	(a)

(a) Total for year. (b) 6/1910 and 14/1912.

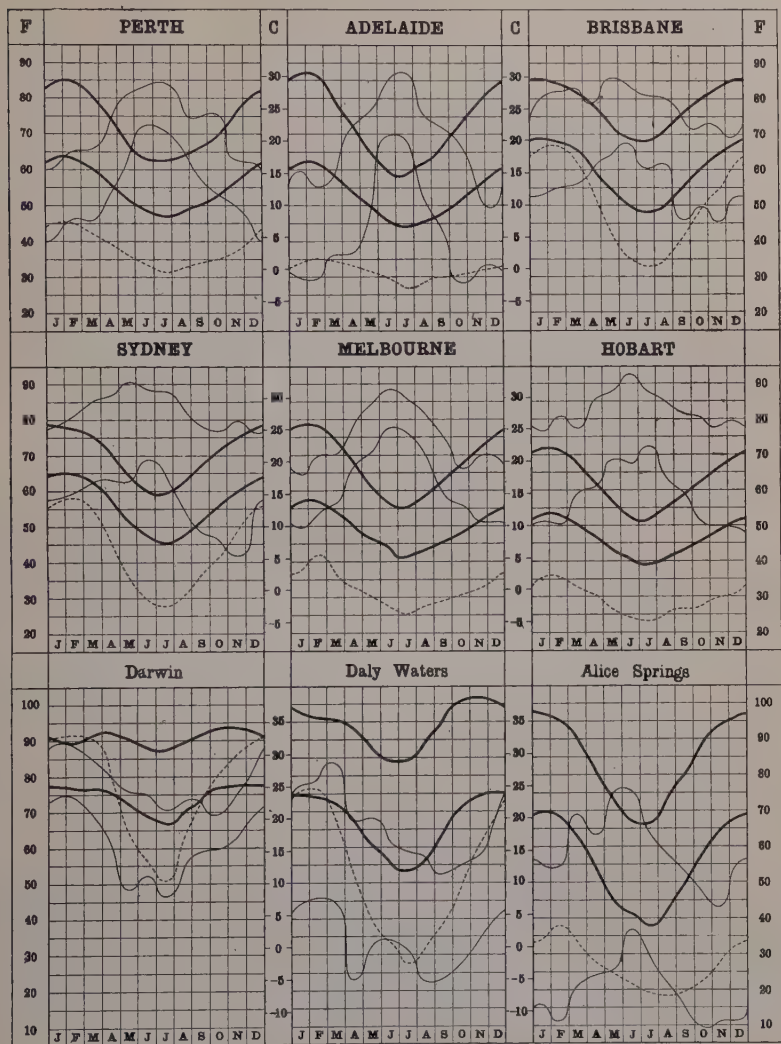
HUMIDITY, RAINFALL, AND DEW.

Month.	Vapour Pressure (inches).	Rel. Hum. (%)			Rainfall (inches).					Dew.	
		Mean 9 a.m.	Mean 3 p.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.		Greatest In One Day.	Mean No. Days Dew.
No. of yrs. over which observation extends	33	33	33	33	54	54	54	54	54	33	
January ..	0.448	51	61	41	0.35	3	2.17	1879	0.00 (a)	1.74 28/79	2.5
February ..	0.448	53	65	46	0.44	3	2.98	1915	0.00 (a)	1.63 26/15	3.5
March ..	0.435	57	66	46	0.78	5	4.50	1896	0.00 (a)	2.06 26/23	5.7
April ..	0.462	62	73	51	1.62	7	5.85	1926	0.00	2.02 30/04	9.4
May ..	0.372	72	81	61	5.09	14	12.13	1879	0.98	2.80 20/79	12.3
June ..	0.341	78	83	68	6.96	17	12.80	1923	2.16	3.90 10/20	12.3
July ..	0.323	77	84	69	6.64	17	12.28	1926	2.42	3.00 4/91	13.1
August ..	0.329	78	79	62	5.73	18	12.21	1928	0.46	1902	11.6
September ..	0.345	68	75	58	3.44	15	7.84	1923	0.34	1916	10.1
October ..	0.352	62	75	54	2.19	12	7.87	1890	0.49	1892	10.1
November ..	0.391	55	69	46	0.80	6	2.78	1916	0.00	1891	5.5
December ..	0.418	52	63	44	0.57	4	3.05	1888	0.00	1886, 1924	3.7
Year { Totals ..	—	—	—	—	34.61	121	—	—	—	—	92.6
Year { Averages ..	0.369	63	—	—	—	—	—	—	—	—	—
Year { Extremes ..	—	—	84	41	—	—	12.80	6/23	Nil (b)	3.90 10/6/20	—

(a) Various years.

(b) Jan., Feb., March, April, Nov., Dec., various years.

ANNUAL FLUCTUATIONS OF NORMAL MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY.



EXPLANATION.—The upper and lower heavy lines in each graph represent the maximum and minimum temperatures respectively. The Fahrenheit temperature scales are shown on the outer edge of the sheet under "F" and the centigrade scales in the two inner columns under "C."

The broken line shows the normal absolute humidity in the form of 9 a.m. vapour pressures for which the figures in the outer "F" columns represent hundredths of an inch of barometric pressure.

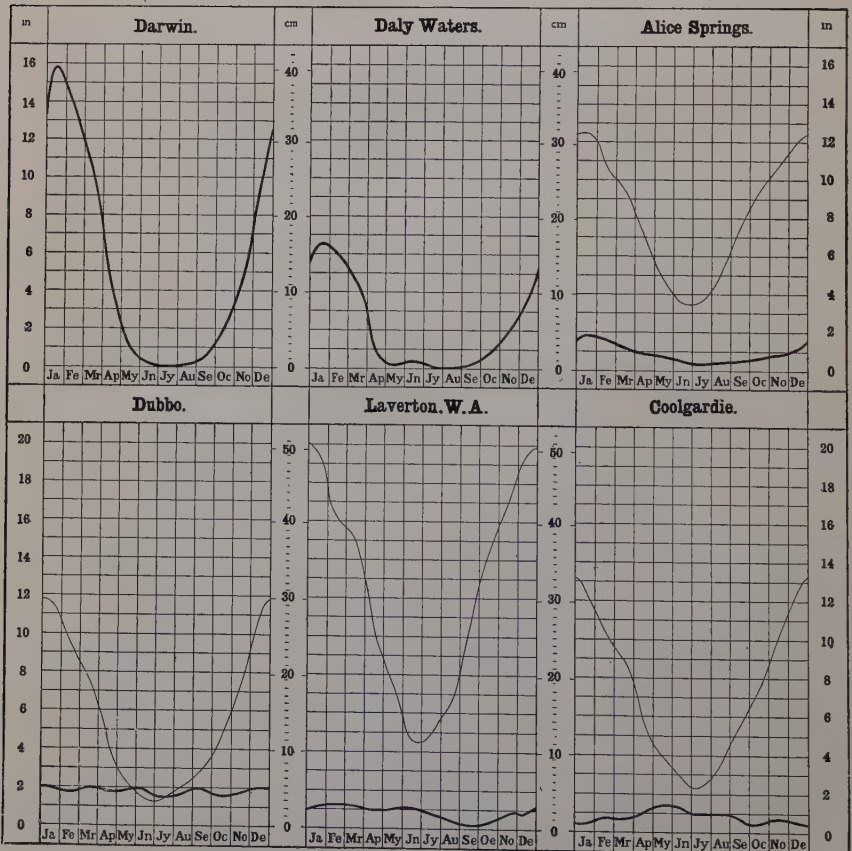
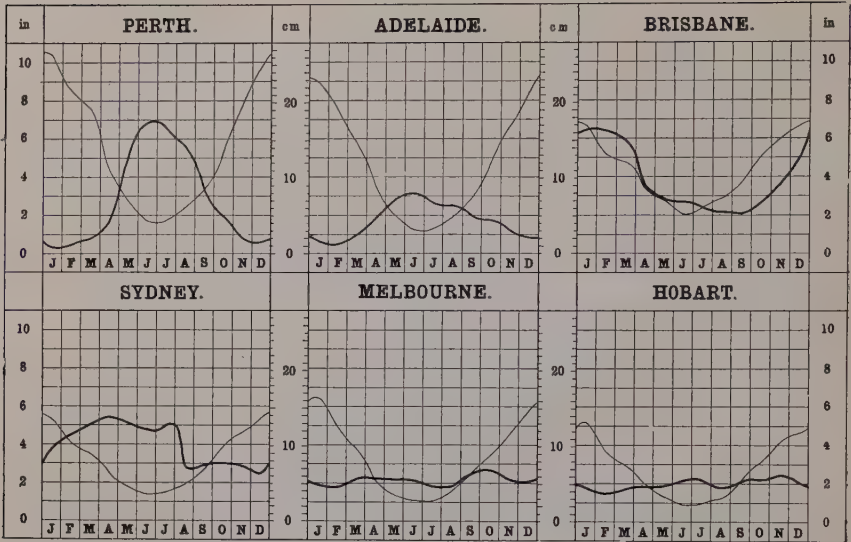
The upper and lower fine lines join the greatest and the least monthly means of relative humidity respectively, the figures under the outer columns "F" indicating percentage values.

The curves for temperature and vapour pressure joining the mean monthly values serve to show the annual fluctuation of these elements, but the relative humidity graphs joining the extreme values for each month do not indicate any normal annual variation.

Comparison of the maximum and minimum temperature curves affords a measure of the mean diurnal range of temperature. At Perth in the middle of January, for instance, there is normally a range of 21° from 63° F. to 84° F., but in June it is only 15° from 48° F. to 63° F.

The relative humidity curves illustrate the extreme range of the mean monthly humidity over a number of years.

MEAN MONTHLY RAINFALL AND EVAPORATION.



EXPLANATION.—On the preceding graphs thick lines denote rainfall, and thin lines evaporation, and show the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables herein are shown in inches (see the outer columns), and the corresponding metric scale (centimetres) is shown in the two inner columns. The evaporation is not given for Darwin and Daly Waters.

At Perth, Adelaide, Brisbane, Melbourne, Hobart, Alice Springs, and Coolgardie the results have been obtained from jacketed tanks sunk in the ground. At Sydney and Dubbo sunken tanks without water jackets are used, whilst at Laverton (W.A.) the records are taken from a small portable jacket evaporation dish of 8 inches in diameter.

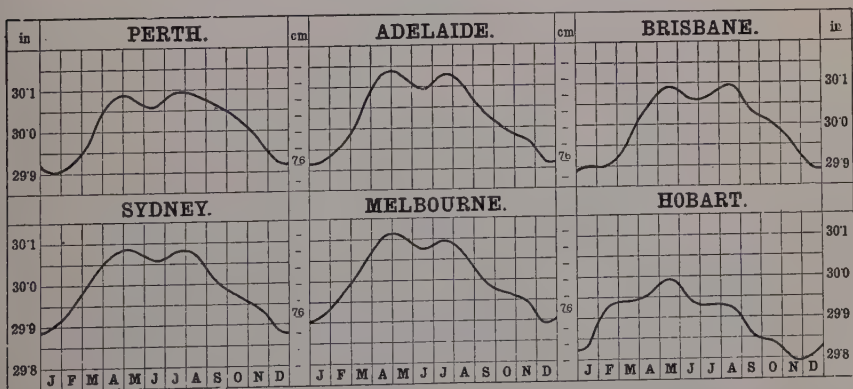
The distance for any date from the zero line to the curve represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide in the middle of January, the rain falls on the average at the rate of about three-fourths of an inch per month, or, say, at the rate of about 9 inches per year. In the middle of June it falls at the rate of a little over 3 inches per month, or, say, at the rate of about 37 inches per year. At Dubbo, the evaporation is at the rate of nearly 11½ inches per month about the middle of January, and only about 1½ inches at the middle of June.

The mean annual rainfall and evaporation at the places indicated are given in the appended table.

MEAN ANNUAL RAINFALL AND EVAPORATION.

Place.	Rainfall.	Evapora- tion.	Place.	Rainfall.	Evapora- tion.
	In.	In.		In.	In.
Perth ..	34.61	65.97	Darwin ..	60.29	—
Adelaide ..	21.12	54.78	Daly Waters ..	26.35	—
Brisbane ..	45.15	55.84	Alice Springs ..	10.79	95.37
Sydney ..	47.84	38.97	Dubbo ..	21.88	66.37
Melbourne ..	26.05	39.17	Laverton, W.A.	9.47	145.04
Hobart ..	23.88	31.94	Coolgardie ..	10.09	84.79

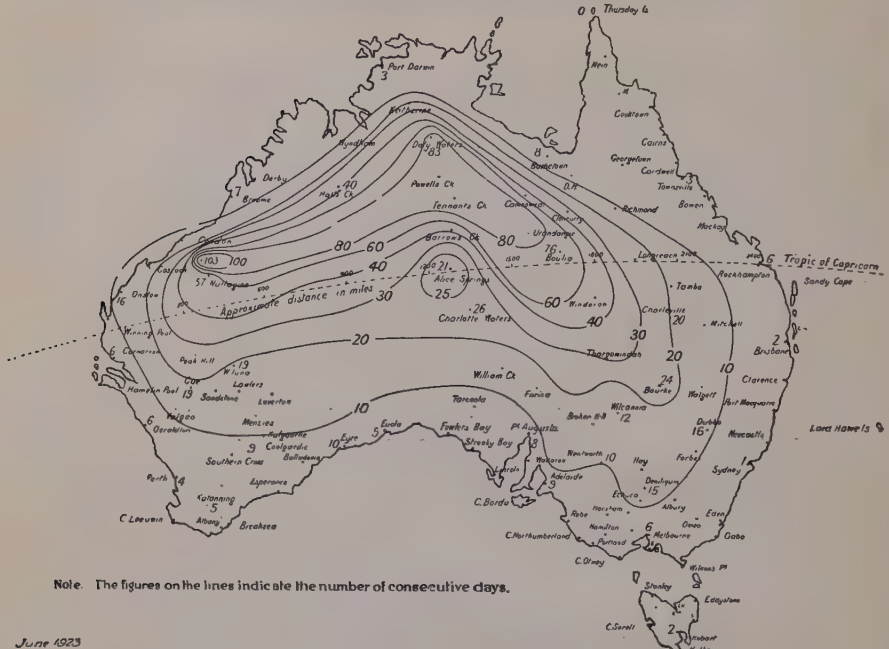
MEAN BAROMETRIC PRESSURE.—CAPITAL CITIES.



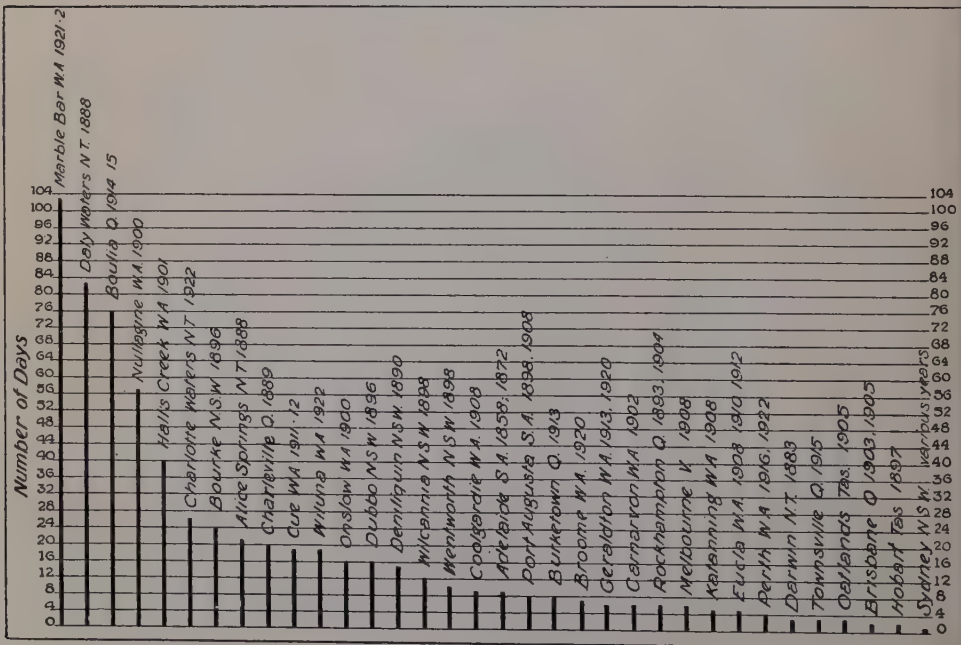
EXPLANATION.—The lines representing the yearly fluctuations of barometric pressure at the State capital cities are means for long periods, and are plotted from the Climatological Tables herein. The pressures are shown in inches on about 2½ times the natural scale, and the corresponding pressures in centimetres are also shown in the two inner columns, in which each division represents one millimetre.

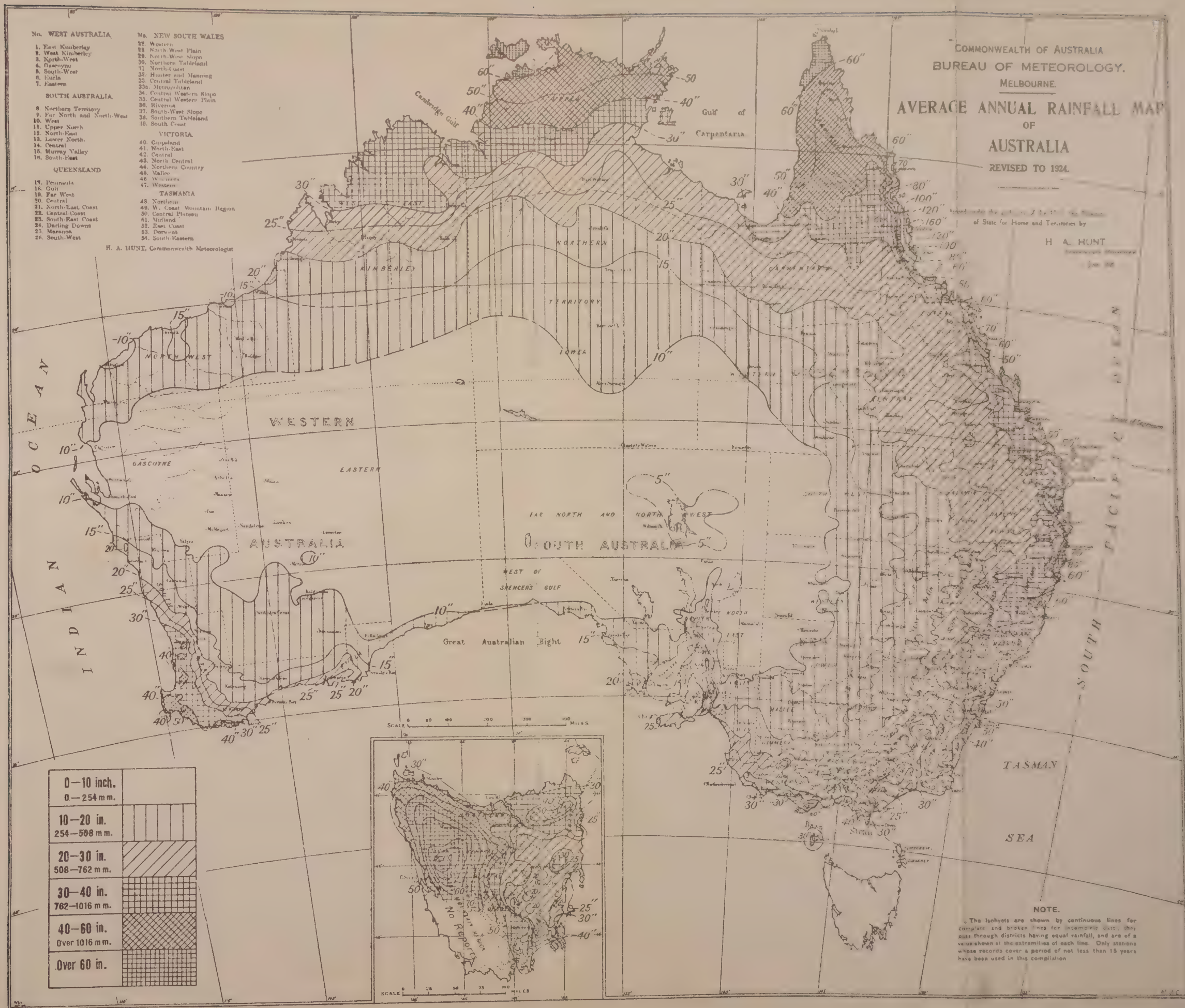
INTERPRETATION.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure in the middle of January is about 29.87 inches, and there are maxima in the middle of May and August of about 30.09 inches.

Area affected and period of duration of the Longest Heat Waves when the Maximum Temperature for consecutive 24 hours reached or exceeded 100° Fah.

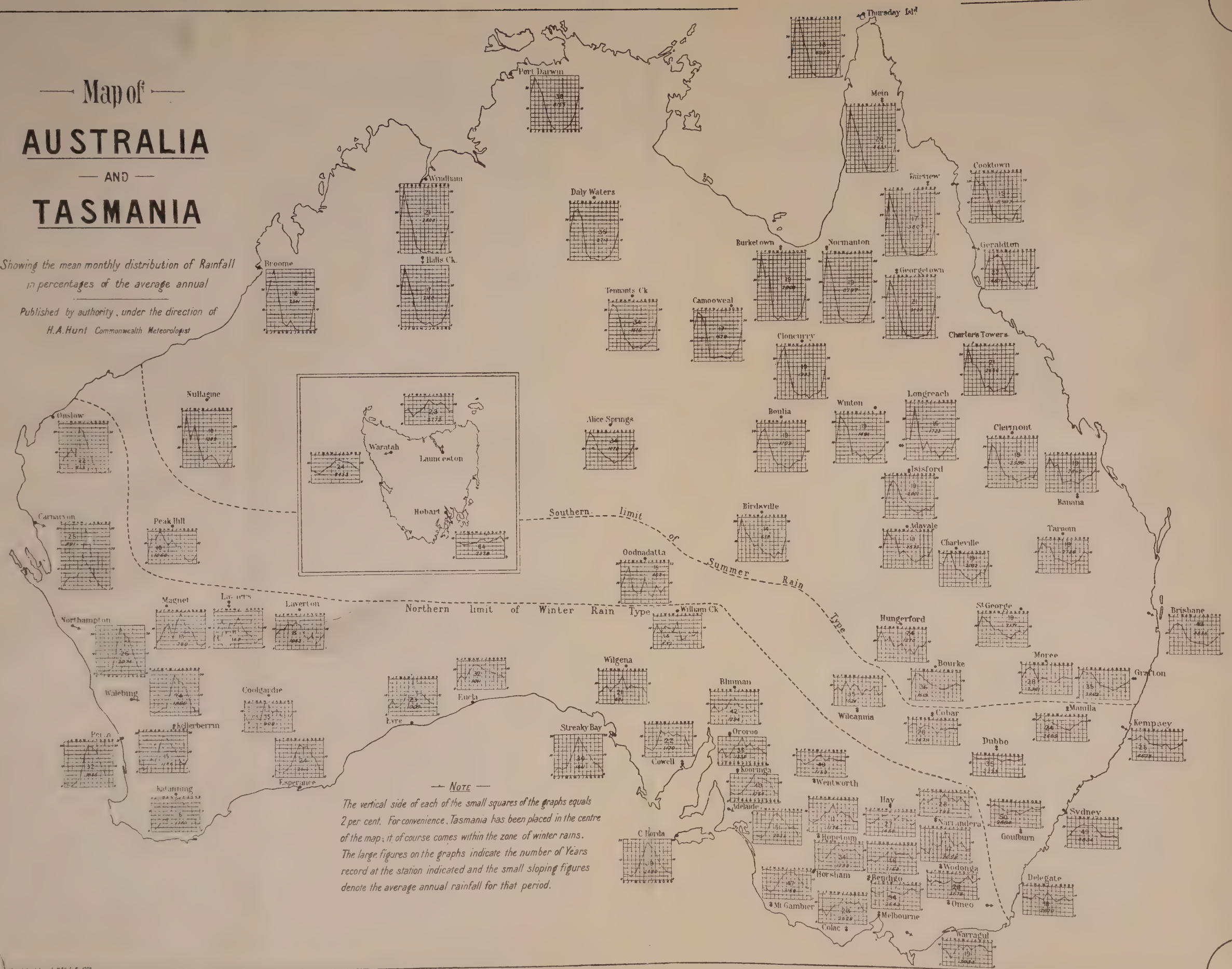


Greatest number of consecutive days on which the Shade Temperature was over 100° Fah. at the places indicated.





Published by authority, under the direction of
H.A.Hunt Commonwealth Meteorologist



CLIMATOLOGICAL DATA—ADELAIDE, SOUTH AUSTRALIA.

LAT. 34° 56' S., LONG. 138° 35' E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m., 3 p.m., & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in One Day.	Mean Hourly Pressure. (lb.)	Total Miles.	Prevailing Direction. 9 a.m. 3 p.m.				
No. of yrs. over which observation extends	73	52	52	52	52	60	58	62	48
January ..	29.916	758 19/99	0.34	7,891	S W S W	8.93	2.3	3.5	8.5
February ..	29.951	691 22/96	0.29	6,669	N E S W	7.32	2.1	3.5	7.4
March ..	30.038	628 9/12	0.24	6,627	S E S W	5.85	2.2	3.9	7.2
April ..	30.119	773 10/96	0.22	6,117	N E S W	3.50	1.6	5.0	4.5
May ..	30.121	760 9/80	0.21	6,286	N E W S W	2.03	1.7	5.8	2.0
June ..	30.097	750 12/78	0.25	6,524	N E N W	1.24	2.0	6.2	1.7
July ..	30.125	674 25/82	0.24	6,721	N E N W	1.29	1.6	5.8	1.8
August ..	30.098	773 31/97	0.28	7,181	N E W S W	1.89	2.2	5.5	2.6
September ..	30.041	720 2/87	0.31	7,259	N N E S W	2.37	2.4	5.2	3.4
October ..	29.994	768 28/93	0.34	7,877	N N E S W	4.78	3.3	5.0	4.1
November ..	29.976	677 2/04	0.32	7,515	S W S W	6.60	3.4	4.6	5.5
December ..	29.919	675 12/91	0.34	7,909	S W S W	8.43	2.7	3.8	7.2
Year { Totals ..	—	—	—	—	—	54.78	27.5	—	55.9
Year { Averages ..	30.033	—	0.28	7,044	N E S W	—	—	4.8	—
Year { Extremes ..	—	773 (a)	—	—	—	—	—	—	—

(a) 10/4/96 and 31/8/97.

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	73	73	73	73	73	73	52	69	48
January ..	86.1	61.5	73.8	116.3 26/58	45.1 21/84	71.2	180.0 18/82	36.5 14/79	309.9
February ..	86.1	62.0	74.0	113.6 12/99	45.5 23/18	68.1	170.5 10/00	35.8 23/26	263.2
March ..	80.7	58.8	69.8	108.0 12/61	44.8 —/57	63.2	174.0 17/83	33.8 27/60	239.5
April ..	73.3	54.6	64.0	98.0 10/66	39.6 15/59	58.4	155.0 1/83	30.2 16/17	180.8
May ..	65.6	50.2	57.9	89.5 4/21	36.9 (a)	52.6	143.2 12/79	25.6 19/28	148.8
June ..	60.4	46.7	53.5	76.0 23/65	32.5 27/76	43.5	138.8 18/79	22.9 12/13	122.4
July ..	53.9	44.6	51.8	74.0 11/06	32.0 24/08	42.0	134.5 26/90	22.1 30/29	138.1
August ..	62.6	45.9	53.9	85.0 31/11	32.3 17/59	52.7	140.0 31/92	22.8 11/29	165.4
September ..	66.3	47.9	57.1	90.7 23/32	32.7 4/58	58.0	160.5 23/82	25.0 25/27	184.4
October ..	72.4	51.4	61.9	102.9 21/32	36.0 —/57	66.9	162.0 30/21	27.8 2/18	228.3
November ..	78.7	55.4	67.0	113.5 21/65	40.8 2/09	72.7	166.9 20/78	31.5 2/09	264.7
December ..	83.2	58.9	71.1	114.2 14/76	43.0 (b)	71.2	175.7 7/99	32.5 4/84	302.1
Year { Averages ..	72.8	53.2	63.0	—	32.0	—	180.0	—	2547.6
Year { Extremes ..	—	—	—	116.3 26/1/58	32.0 24/7/08	84.3	180.0 18/1/82	22.1 30/7/29	(c)

(a) 26/1895 and 24/1904. (b) 16/1861 and 4/1906. (c) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Vapour Pressure (inches).	Rel. Hum. (%)				Rainfall (inches).				Dew.
		Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	
No. of yrs. over which observation extends	62	62	62	62	91	91	91	91	91	58
January ..	0.340	38	59	30	0.72	4	4.00 1850	NH	(a) 2.30 2/89	3.9
February ..	0.357	41	56	30	0.74	4	6.09 1925	NH	(a) 5.57 7/25	5.6
March ..	0.346	46	58	36	1.02	6	4.60 1878	NH	(a) 3.50 5/78	10.7
April ..	0.336	56	72	37	1.71	9	6.78 1853	0.03 1923	3.15 5/60	13.8
May ..	0.317	67	76	49	2.75	14	7.75 1875	0.20 1891	2.75 1/53	15.7
June ..	0.298	76	84	67	3.11	16	8.58 1916	0.42 1886	2.11 1/20	15.8
July ..	0.276	76	87	68	2.64	16	5.38 1865	0.37 1899	1.75 10/65	17.1
August ..	0.283	69	77	54	2.50	16	6.24 1852	0.35 1914	2.23 19/51	16.6
September ..	0.294	60	72	44	2.04	14	5.83 1923	0.45 1896	1.59 20/23	15.5
October ..	0.298	51	67	29	1.73	11	3.83 1870	0.17 1914	2.24 16/08	12.6
November ..	0.310	43	57	31	1.14	7	3.55 1851	0.04 1885	1.88 28/58	6.7
December ..	0.323	39	50	33	1.02	6	3.98 1861	NH 1904	2.42 23/13	4.5
Year { Totals ..	—	—	—	—	21.12	123	—	—	—	138.5
Year { Averages ..	0.309	53	—	—	—	—	8.58 6/16	NH (b)	5.57 7/2/25	—
Year { Extremes ..	—	—	87	29	—	—	—	—	—	—

(a) Various years. (b) January, February, March, December, various years.

CLIMATOLOGICAL DATA—BRISBANE, QUEENSLAND.

LAT. 27° 28' S., LONG. 153° 2' E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m., 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in One Day.	Mean Hourly Pressure. (lb.)	Total Miles.	Prevailing Direction. 9 a.m. 3 p.m.				
No. of yrs. over which observation extends	43	16	18	18	43	21	43	38	21
January	29.867	361 1/22	0.13	4,866	E	6.785	6.7	5.7	3.2
February	29.902	332 28/29	0.13	4,692	S E	5.422	5.6	5.8	2.0
March	29.959	488 1/29	0.11	4,492	S E	4.988	4.5	5.3	5.2
April	30.045	400 3/25	0.10	4,191	S & S E	3.927	3.4	4.5	8.1
May	30.081	363 7/16	0.08	3,947	S	3.070	3.3	4.3	9.5
June	30.068	455 14/28	0.09	3,974	S W	2.598	2.3	4.2	9.0
July	30.071	350 2/23	0.09	3,961	S W	2.627	2.6	3.7	12.8
August	30.097	331 6/23	0.09	4,178	S W	3.399	3.7	3.4	12.5
September	30.040	322 14/23	0.09	3,933	N E & S	4.218	5.8	3.5	12.4
October	30.090	325 25/18	0.11	4,470	N E	5.580	6.8	4.0	9.1
November	29.957	371 10/28	0.13	4,681	N E	6.298	8.7	4.7	6.3
December	29.887	467 15/26	0.14	5,031	N E	6.930	9.3	5.3	3.8
Year { Totals	—	—	—	—	—	55.842	62.7	—	93.9
Year { Averages	29.998	—	0.11	4,372	S & E	—	—	4.5	—
Year { Extremes	—	488 1/3/29	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	43	43	43	43	43	43	41	43	21
January	85.4	68.9	77.2	108.9 14/02	58.8 4/03	50.1	166.4 10/17	49.9 4/93	225.5
February	84.6	63.5	76.6	105.7 21/25	58.7 (a)	47.0	165.2 6/10	49.3 9/89	201.8
March	82.3	66.3	74.3	99.4 5/19	52.4 29/13	47.0	161.7 4/25	45.4 29/13	208.8
April	79.0	61.6	70.3	95.2 (b)	44.4 25/25	50.8	153.8 11/16	36.7 24/25	209.2
May	73.6	55.3	64.5	90.3 21/23	41.3 24/99	49.0	147.0 1/10	38.8 8/97	205.3
June	69.3	51.0	60.2	88.9 19/13	36.3 29/08	52.0	136.0 3/18	25.4 23/88	177.0
July	68.5	48.4	58.5	83.4 28/08	36.1 (c)	47.3	146.1 20/15	23.9 11/90	209.7
August	71.2	49.9	60.6	88.5 25/28	37.4 6/87	51.1	141.9 20/17	27.1 9/99	234.8
September	75.1	54.8	65.3	95.2 16/12	40.7 1/96	54.5	155.5 26/03	30.4 1/89	237.8
October	79.7	59.9	69.8	101.4 18/93	43.3 3/99	58.1	157.4 31/18	34.9 8/89	255.2
November	82.8	64.2	73.5	106.1 18/13	48.5 2/05	57.6	162.3 7/89	38.8 1/05	247.5
December	85.1	67.5	76.3	105.9 26/03	56.4 13/12	49.5	161.7 27/26	49.1 3/94	242.3
Year { Averages	78.1	59.7	68.9	—	—	72.8	—	—	2654.9
Year { Extremes	—	—	—	108.9 14/1/02	36.1 (d)	—	166.4 10/1/17	23.9 11/7/90	(e)

(a) 10 and 11/04.

(b) 9/96 and 5/03.

(c) 12/94 and 2/96.

(d) 12/7/94 and 2/7/96.

(e) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Vapour Pressure (inches).	Rel. Hum. (%)				Rainfall (inches).				Dew.
		Mean 9 a.m.	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	
No. of yrs. over which observation extends	43	43	43	43	78	70	78	78	60	43
January	0.639	66	79	53	6.47	14	27.72 1895	0.32 1919	18.31 21/87	7.9
February	0.650	69	82	55	6.31	14	40.39 1893	0.58 1849	8.36 16/93	7.7
March	0.615	72	85	56	5.75	15	34.04 1870	Nil 1849	11.18 14/08	11.2
April	0.525	72	80	60	3.77	12	15.28 1867	0.05 1897	4.97 19/28	13.6
May	0.423	73	85	61	2.77	10	13.85 1876	Nil 1846	5.62 9/79	14.9
June	0.359	74	84	67	2.78	8	14.03 1873	Nil 1847	6.01 9/93	12.8
July	0.328	72	81	61	2.24	8	8.46 1889	Nil 1841	3.54 (c)	14.3
August	0.350	69	80	56	2.05	7	14.67 1879	Nil (a)	4.89 12/87	12.8
September	0.412	64	76	47	2.01	8	5.43 1886	0.10 1907	2.46 2/94	12.4
October	0.475	60	72	48	2.56	9	9.99 1882	0.14 1900	3.75 3/27	11.0
November	0.549	59	72	45	3.71	10	12.41 1917	Nil 1842	4.46 18/86	7.4
December	0.600	62	69	51	4.90	12	13.99 1910	0.35 1865	6.60 28/71	6.8
Year { Totals	—	—	—	—	45.32	127	—	—	—	132.8
Year { Averages	0.494	68	—	—	—	—	—	—	—	—
Year { Extremes	—	—	85	45	—	—	40.39 2/93	Nil (b)	18.31 21/1/87	—

(a) 1862, 1869, 1880.

(b) March, May, June, July, August, and November, various years.

(c) 15/76 and 16/89.

CLIMATOLOGICAL DATA—SYDNEY, NEW SOUTH WALES.

LAT. 33° 52' S., LONG. 151° 12' E. HEIGHT ABOVE M.S.L., 138 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. in Sea Level and Standard Gravity from hourly readings.	Wind.*				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds 9 a.m., 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in One Day.	Mean Hourly Pressure (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	71	63	63	63	63	50	70	68	19
January ..	29.897	627 3/93	0.27	7,078	E N E	5.350	4.8	5.8	5.1
February ..	29.942	697 12/69	0.24	6,068	E N E	4.193	4.3	5.9	5.4
March ..	30.011	754 20/70	0.19	5,899	E N E	3.616	4.1	5.5	6.0
April ..	30.071	642 6/82	0.17	5,359	W	2.585	3.8	5.0	7.4
May ..	30.078	682 6/98	0.17	5,554	W	1.826	3.1	4.8	7.6
June ..	30.061	642 13/08	0.21	5,958	W	1.430	2.1	4.8	9.0
July ..	30.071	744 17/79	0.20	6,150	W	1.529	2.3	4.4	10.1
August ..	30.070	649 22/72	0.19	5,933	W	1.910	3.2	4.0	10.7
September ..	30.008	771 6/74	0.22	6,189	W	2.688	4.0	4.3	9.7
October ..	29.966	741 4/72	0.25	6,771	E N E	3.887	4.8	4.9	7.4
November ..	29.939	583 12/87	0.25	6,609	E N E	4.595	5.4	5.5	6.1
December ..	29.881	750 3/84	0.26	6,981	E N E	5.368	5.7	5.6	5.3
Year { Totals ..	—	—	—	—	—	38.971	47.6	—	89.8
Averages ..	29.999	771 6/9/74	0.22	6,212	W	—	—	5.0	—
Extremes ..	—	—	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	71	71	71	71	71	71	68	71	9†
January ..	78.4	64.9	71.6	108.5 13/96	51.2 14/65	57.3	164.3 26/16	43.7 6/25	231.3
February ..	77.7	65.0	71.3	107.8 8/26	49.3 28/63	58.5	161.2 8/26	43.4 25/91	196.5
March ..	75.7	62.9	69.3	102.6 3/69	48.8 14/86	53.8	158.3 10/26	39.9 17/13	200.6
April ..	71.4	58.1	64.7	91.0 20/22	44.6 27/64	46.4	144.1 10/77	33.3 24/09	177.6
May ..	65.5	52.1	58.8	86.0 1/19	40.2 22/59	45.8	129.7 1/96	29.3 25/17	169.9
June ..	61.1	48.3	54.7	79.8 2/23	38.0 5/20	41.8	125.5 2/23	28.1 24/11	160.1
July ..	59.6	45.9	52.7	78.3 22/26	35.9 12/90	42.4	124.7 19/77	24.0 4/93	190.5
August ..	62.7	47.5	55.1	82.0 31/84	36.8 3/72	45.2	142.2 12/78	30.1 17/05	220.3
September ..	67.0	51.4	59.2	92.3 27/19	40.8 18/64	51.5	151.9 30/31/14	32.7 9/05	238.6
October ..	71.3	55.8	63.6	98.9 19/98	42.2 6/27	56.9	168.5 28/99	36.0 6/06	234.4
November ..	74.4	59.6	67.0	102.7 21/78	45.8 1/05	56.9	164.5 27/89	41.4 3/24	219.8
December ..	77.2	62.9	70.1	107.5 31/04	48.4 3/24	59.1	—	—	—
Year { Averages ..	70.2	56.2	63.2	108.5 13/1/96	35.9 12/7/90	72.6	164.5 27/12/89	24.0 4/7/93	2458.3 (a)
Extremes ..	—	—	—	—	—	—	—	—	—

(a) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Vapour Pressure (inches).	Rel. Hum. (%)			Rainfall (inches).					Dew.
	Mean 9 a.m.	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest In One Day.	Mean No. of Days Dew.
No. of yrs. over which observation extends	71	71	71	71	71	71	71	71	71	71
January	0.546	67	78	58	3.61	14	15.26 1911	0.32 1929	7.08 13/11	1.3
February	0.564	71	81	59	4.33	14	18.56 1873	0.34 1902	8.90 25/73	2.3
March	0.529	72	85	62	4.97	15	18.70 1870	0.42 1876	6.52 9/13	3.9
April	0.446	76	87	63	5.52	13	24.49 1861	0.06 1868	7.52 29/60	6.2
May	0.358	78	90	63	5.22	15	23.03 1919	0.18 1860	8.36 28/89	6.8
June	0.299	77	89	68	4.75	12	16.30 1885	0.10 1904	5.17 16/84	6.0
July	0.274	76	88	63	4.80	12	13.21 1900	0.12 1862	5.72 28/08	6.2
August	0.291	72	84	56	2.96	11	14.89 1899	0.04 1885	5.33 2/60	5.8
September	0.333	66	79	49	2.80	12	14.05 1879	0.08 1882	5.69 16/79	4.2
October	0.379	62	77	46	2.92	12	11.14 1916	0.21 1867	6.37 13/02	3.0
November	0.444	63	79	42	2.82	12	9.89 1865	0.07 1915	4.23 19/00	2.5
December	0.502	64	77	52	2.82	13	15.82 1920	0.23 1913	4.75 13/10	1.8
Year {	Totals	—	—	—	47.52	155	—	—	—	50.0
	Averages	0.400	69	—	—	—	24.49	0.04	8.90	—
	Extremes	—	—	90	42	—	—	4/1861	8/1885	25/2/73

* Early records revised during 1929. Values for period 1867–September, 1885, reduced 20 per cent.; for period September, 1885–March, 1913, reduced 10 per cent.
† From 1921 only; previous records discarded owing to faulty exposure of instrument.

CLIMATOLOGICAL DATA—MELBOURNE, VICTORIA.

LAT. 37° 49' S., LONG. 144° 58' E. HEIGHT ABOVE M.S.L., 115 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M. Sea Level and Stan- dard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m., 3 p.m. & 9 p.m.	No. of Clear Days.	
		Greatest Number of Miles in One Day.	Mean Hourly Pres- sure. (lbs.)	Total Miles.	Prevailing Direction. 9 a.m. 3 p.m.					
No. of yrs. over which observation extends	72	56	56	56	56	57	22	72	22	
January	29.910	583	10/97	0.27	7,099	S W S E	6.467	2.0	5.0	7.3
February	29.959	566	8/68	0.22	6,144	S W S E	5.063	2.6	5.0	7.0
March	30.032	677	9/81	0.20	6,115	S W S E	4.000	1.6	5.5	5.4
April	30.105	597	7/68	0.18	5,548	S W N W	2.412	0.9	5.8	4.7
May	30.102	693	12/65	0.18	5,708	N W N E	1.484	0.6	6.5	3.2
June	30.077	761	13/76	0.22	6,103	N W N E	1.103	0.6	6.6	2.5
July	30.089	755	8/74	0.21	6,187	N W N E	1.074	0.5	6.3	3.0
August	30.065	637	14/75	0.24	6,597	N W N E	1.486	1.0	6.3	3.0
September	29.996	617	11/72	0.26	6,743	N W S W	2.319	1.4	6.1	3.3
October	29.963	899	5/66	0.27	7,066	S W N W	3.377	2.0	6.0	3.5
November	29.949	734	13/66	0.27	6,801	S W S E	4.576	2.5	5.9	3.6
December	29.897	655	1/75	0.28	7,236	S W S E	5.807	2.0	5.5	4.1
Year { Totals	—	—	—	—	—	—	—	—	—	—
Averages	30.012	—	—	0.23	6,445	S W N W	39.168	17.7	—	50.6
Extremes	—	899	5/10/66	—	—	—	—	—	5.9	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.				
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.					
No. of yrs. over which observation extends	74	74	74	74	74	74	70	70	48				
January	78.1	56.8	67.4	111.2	14/62	42.0	28/85	69.2	178.5	14/62	30.2	28/85	263.5
February .. .	78.0	57.2	67.6	109.5	7/01	40.2	24/24	69.3	167.5	15/70	30.9	6/91	240.9
March	74.4	54.7	64.5	105.5	2/93	37.1	17/84	68.4	164.5	1/68	28.9	(b)	205.9
April	68.2	50.8	50.5	94.0	(a)	34.8	24/88	59.2	152.0	8/61	25.0	23/97	162.9
May	61.4	46.7	54.1	83.7	7/05	29.9	29/16	53.8	142.6	2/59	21.1	26/16	138.7
June	53.8	44.0	50.4	72.2	1/07	28.0	11/66	44.2	129.0	11/61	19.9	30/29	111.9
July	55.6	41.8	48.7	69.3	22/26	27.0	21/69	42.3	125.8	27/80	20.5	12/03	108.3
August .. .	58.7	43.4	51.0	77.0	20/85	28.3	11/63	48.7	137.4	29/69	21.3	14/02	155.5
September ..	62.6	45.7	54.1	88.6	28/28	31.1	16/08	57.5	142.1	20/67	22.8	8/18	172.2
October .. .	67.1	48.3	57.7	98.4	24/14	32.1	3/71	66.3	154.3	28/68	24.8	22/18	204.3
November ..	71.4	51.3	61.3	105.7	27/94	36.5	2/96	69.2	159.6	29/65	24.6	2/96	239.4
December ..	75.4	54.3	64.8	110.7	15/76	40.0	4/70	70.7	170.3	20/69	33.2	1/04	251.4
Year { Averages ..	67.3	49.6	58.4	—	—	—	—	—	—	—	—	—	2255.0
Extremes ..	—	—	—	111.2	—	27.0	—	84.2	178.5	—	19.9	—	(c)
				14/1/62		21/7/69			14/1/62		30/6/29		

(a) 6/1865 and 17/1922.

(b) 17/1884 and 20/1897.

(c) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Vapour Pressure (inches).	Rel. Hum. (%)				Rainfall (inches).							Dew.
		Mean 9 a.m.	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.		Least Monthly.	Greatest in One Day.	Mean No. of Days Dew.	
No. of yrs. over which observation extends	22	22	22	22	74	74	74		74	71		22	
January ..	0.382	58	65	50	1.92	8	5.68	1904	0.04	1878	2.97	9/97	2.5
February ..	0.419	62	69	48	1.75	7	6.24	1904	0.03	1870	3.37	18/19	3.5
March ..	0.371	64	71	57	2.23	10	7.50	1911	0.18	1859	3.55	5/19	7.3
April ..	0.353	71	75	66	2.18	11	6.71	1901	Nil	1923	2.28	22/01	8.7
May ..	0.312	78	86	71	2.16	13	4.31	1862	0.45	1901	1.85	7/91	9.2
June ..	0.277	83	89	76	2.04	14	4.51	1859	0.73	1877	1.74	21/04	8.6
July ..	0.262	82	86	76	1.84	14	7.02	1891	0.57	1902	2.71	12/91	9.0
August ..	0.267	76	82	70	1.86	14	4.04	1924	0.48	1903	1.94	26/24	8.2
September ..	0.289	68	76	60	2.40	14	7.93	1916	0.52	1907	2.62	12/80	6.4
October ..	0.300	62	67	53	2.63	13	7.61	1869	0.29	1914	3.00	17/69	5.7
November ..	0.329	60	69	52	2.22	11	6.71	1916	0.25	1895	2.57	16/76	1.9
December ..	0.371	58	69	51	2.26	9	7.18	1863	0.11	1904	2.62	28/07	1.7
Year {	Totals ..	—	—	—	25.49	138	—		—	—		72.7	
	Averages ..	0.326	68	—	—	—	—		—	—		—	
	Extremes ..	—	89	48	—	—	7.93 9/1916		Nil 4/1923	3.55 5/3/19		—	

CLIMATOLOGICAL DATA—HOBART, TASMANIA.

LAT. 42° 53' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L., 177 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F., M.S. Sea level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Cloud, 9 a.m., 3 p.m., & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in One Day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction. 9 a.m. 3 p.m.				
No. of yrs. over which observation extends	45	19	19	19	24	19	22	67	23
January ..	29.828	500 30/16	0.19	5,981	N N W & N S E	4.879	0.9	6.0	2.5
February ..	29.919	605 4/27	0.15	4,739	N S E	3.690	1.2	6.0	2.5
March ..	29.942	443 19/27	0.13	4,927	N & N N W S E	3.040	1.3	5.9	2.4
April ..	29.964	533 27/26	0.14	4,929	N to N W N W & S E	2.047	0.7	6.1	1.6
May ..	29.985	423 15/27	0.12	4,787	N W to N N to N W	1.420	0.5	6.1	2.2
June ..	29.953	569 27/20	0.13	4,642	N W & N N W N to N W	0.925	0.6	6.1	2.2
July ..	29.927	489 22/29	0.13	4,866	N N W & N W N to N W	0.952	0.5	5.8	2.2
August ..	29.923	612 19/26	0.14	5,079	N N & N W N & N W	1.303	0.5	5.9	2.1
September ..	29.847	516 26/15	0.19	5,669	N N W & N N W & S E	2.020	0.8	6.1	1.5
October ..	29.824	461 8/12	0.20	6,051	N S E	3.123	0.7	6.3	1.3
November ..	29.805	508 18/15	0.19	5,802	N S E	3.992	0.9	6.4	1.5
December ..	29.806	486 30/20	0.18	5,729	N S E	4.549	1.0	6.3	1.1
Year { Totals ..	—	—	—	—	—	31.945	9.6	—	23.1
{ Averages ..	29.894	—	0.16	5,267	N to N W S E & N W	—	—	6.0	—
{ Extremes ..	—	612 19/8/26	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	59	59	59	83	83	83	42	62	35
January ..	71.2	52.9	62.1	105.0 (a)	40.0 3/72	65.0	160.0 (b)	30.6 19/97	215.1
February ..	71.3	53.3	62.3	104.4 12/99	39.0 20/87	65.4	165.0 24/98	28.3 —/87	180.2
March ..	67.9	50.8	59.4	99.0 —/61	35.2 31/26	63.8	150.0 3/05	27.5 30/02	177.2
April ..	62.7	47.7	55.2	90.0 1/56	30.0 25/56	60.0	142.0 18/93	25.0 —/86	141.0
May ..	57.3	43.7	50.5	77.8 5/21	29.2 20/02	48.6	128.0 (c)	20.0 19/02	132.1
June ..	52.8	41.0	46.9	75.0 7/74	28.0 22/79	47.0	122.0 12/94	21.0 6/87	105.4
July ..	52.0	39.4	45.7	72.0 22/77	27.0 18/66	45.0	121.0 12/93	18.7 16/86	124.3
August ..	55.0	41.0	48.0	77.0 3/76	30.0 10/73	47.0	129.0 —/87	20.1 7/09	146.5
September ..	58.8	43.2	51.0	81.7 23/26	30.0 12/41	51.7	138.0 23/93	18.3 16/26	148.6
October ..	62.6	45.5	54.0	92.0 24/14	32.0 12/89	60.0	156.0 9/93	23.8 (d)	171.9
November ..	66.0	48.2	57.1	98.0 23/88	35.2 5/13	62.8	154.0 19/92	26.0 1/08	201.9
December ..	69.2	51.2	60.2	105.2 30/97	38.0 13/06	67.2	157.0 30/18	27.2 —/86	200.5
Year { Averages ..	62.2	46.5	54.4	—	—	—	—	—	1944.7
{ Extremes ..	—	—	—	105.2 30/12/97	27.0 18/7/66	78.2	165.0 24/2/98	18.3 16/9/26	(e)

(a) 27/49 and 1/00. (b) 5/86 and 13/05. (c) —/89 and —/93. (d) 1/86 and —/99. (e) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Vapour Pressure (inches).	Rel. Hum. (%)				Rainfall (inches).				Dew.
		Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest In One Day.	
No. of yrs. over which observation extends	43	43	43	43	87	86	87	87	63	20
January ..	0.336	59	72	47	1.87	10	5.91 1893	0.03 1841	2.96 30/16	0.6
February ..	0.356	63	77	53	1.47	9	9.15 1854	0.13 1847	4.50 27/54a	1.6
March ..	0.332	67	77	58	1.68	10	7.60 1854	0.02 1843	2.79 5/19	4.8
April ..	0.300	72	84	58	1.91	11	6.50 1900	0.07 1904	5.02 20/09	9.5
May ..	0.268	77	89	65	1.89	13	6.37 1905	0.10 1843	3.22 14/58	12.7
June ..	0.241	80	91	68	2.23	14	8.15 1889	0.24 1852	4.11 13/89	8.7
July ..	0.231	81	94	72	2.17	15	6.02 1922	0.30 1850	2.51 18/22	8.6
August ..	0.238	75	92	64	1.82	14	10.16 1858	0.23 1854	4.35 12/58	8.7
September ..	0.256	68	85	60	2.09	15	7.14 1844	0.40 1847	2.73 13/44	4.6
October ..	0.273	64	73	51	2.28	15	6.67 1906	0.26 1850	2.58 4/06	2.8
November ..	0.294	59	72	50	2.47	14	8.94 1849	0.16 1868	3.97 7/49	1.2
December ..	0.316	57	67	45	2.02	12	9.00 1875	0.11 1842	2.82 21/29	0.8
Year { Totals ..	—	—	—	—	23.90	152	—	—	—	64.6
{ Averages ..	0.284	67	—	—	—	—	—	—	—	—
{ Extremes ..	—	—	94	45	—	—	10.16 8/1858	6.02 3/1843	5.02 20/4/09	—

(a) 4.18 on 28/54 also.

CHAPTER III.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

1. **General.**—A brief account of the general legislative powers of the Commonwealth and States is given in preceding issues of the *Official Year Book* (see No. 13, pp. 927 to 951, and No. 22, page 64). It is not proposed to repeat this information in the present issue.

2. **Powers and Functions of the Governor-General and of the State Governors.**—A detailed statement of the powers and functions of the Governor-General and of the State Governors will be found in preceding issues of the *Official Year Book* (see No. 18, pp. 78 to 80), but considerations of space preclude the repetition of this information in the present volume.

3. **Governor-General and State Governors.**—The present Governor-General is the Right Honourable JOHN LAWRENCE, BARON STONEHAVEN, P.C., G.C.M.G., D.S.O. He assumed office on the 8th October, 1925.

The following is a list of the Governors of the various States of the Commonwealth :—

New South Wales ..	Air Vice-Marshal SIR PHILIP WOOLCOTT GAME, G.B.E., K.C.B., D.S.O.
Victoria ..	Lieut.-Colonel the Rt. Hon. ARTHUR HERBERT TENNYSON, BARON SOMERS, K.C.M.G., D.S.O., M.C.
Queensland ..	Lieut.-General SIR THOMAS HERBERT JOHN CHAPMAN GOODWIN, K.C.B., C.M.G., D.S.O.
South Australia ..	Brigadier-General SIR ALEXANDER GORE ARKWRIGHT HORE-RUTHEVEN, V.C., K.C.M.G., C.B., D.S.O.
Western Australia ..	Colonel SIR WILLIAM ROBERT CAMPION, K.C.M.G., D.S.O.
Tasmania ..	Captain SIR JAMES O'GRADY, K.C.M.G., O.B.E., J.P.

4. **The Cabinet and Executive Government.**—(i) *General.* In both the Commonwealth and the State Legislatures the forms of government have been founded on their prototypes in the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth are vested in the Governor-General in Council, and in the State Governments in the Governor in Council. The Executive Council in the Commonwealth and in the majority of the States is practically co-extensive with a group of departmental chiefs, who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In the Commonwealth Government, however, as well as in the States of Victoria and Tasmania, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(ii) *The Executive Council.* This body is composed of the Governor and the Ministers of State holding office for the time being. The latter are sworn both as Executive Councillors and as Ministers controlling the different administrative departments. It should be observed that all persons living who have held Ministerial office under former Governments are also technically members of the Executive Council, and are thus liable to be specially summoned for attendance at meetings of that body. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of the proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

(iii) *The Appointment of Ministers and of Executive Councillors.* Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls, the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the Imperial Parliament. The customary procedure in connexion with the resignation or acceptance of office by a Ministry is described fully in previous issues of the Year Book. (See No. 6, page 942.)

(iv) *Ministers in Upper or Lower Houses.* The subjoined table shows the number of Ministers with seats in the Upper or Lower Houses of each Parliament in May, 1930.

AUSTRALIAN PARLIAMENTS—MINISTERS IN UPPER OR LOWER HOUSES,
1930.

Ministers with Seats in—	C'wealth.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
The Upper House ..	2	3	4	..	2	1	1	13
The Lower House ..	11	11	8	10	4	7	6	57
Total	13	14	12	10	6	8	7	70

(v) *The Cabinet.* (a) *General.* The meetings of this body are private and deliberative. The actual Ministers of the day are alone present, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet, being the leaders of the party in power in Parliament, control the bent of legislation, and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament, the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally in no way bound to accept such advice.

(b) *Commonwealth Ministers of State.* A statement showing the names of Ministers of State who have held office from the inauguration of the Commonwealth Government to 1925 will be found in Official Year Book No. 18, pages 82 and 83, but considerations of space preclude its inclusion in the present issue.

(c) *State Ministries.* A list of the members of the Ministry in each State in May, 1930, will be found in § 3 of this chapter.

5. **Number and Salary of Members of the Legislatures.**—The following table shows the number and annual salary of members in each of the legislative chambers in May, 1930:—

MEMBERS OF COMMONWEALTH AND STATE PARLIAMENTS, AND ANNUAL SALARIES, 1930.

Members in—	C'wealth.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
MEMBERS.								
Upper House ..	36	93	34	(a)	20	30	18	231
Lower House ..	76	90	65	72	46	50	30	429
Total ..	112	183	99	72	66	80	48	660
ANNUAL SALARY.								
Upper House ..	£ 1,000	£ ..	£ 200	£ (a)	£ 400	£ 600	£ 370-500	..
Lower House ..	1,000	744	500	500	400	600	400-500	..

(a) Council abolished in 1922.

The use of the expressions "Upper House" and "Lower House" in the above statement, though not justified constitutionally, is convenient, inasmuch as the legislative chambers are known by different names in the Commonwealth and in some of the States.

6. **Enactments of the Parliament.**—In the Commonwealth, all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act. In the States, laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council (except in Queensland) and Legislative Assembly or House of Assembly. The Governor-General or the State Governor acts as Viceroy as regards giving the Royal assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States, the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States, in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

§ 2. Parliaments and Elections.

1. **Qualifications for Membership and for Franchise.**—The conspectus in § 4 of "General Government" in Year Book No. 13 contains particulars, as in 1920, relating to the legislative chambers in the Commonwealth and State Parliaments, and shows concisely the qualifications necessary for membership and for the franchise in each House. (These are, in the main, applicable in 1930, but it must be remembered that Queensland abolished the Upper House in 1922). It has further to be remembered that in 1925 the Commonwealth Parliament passed an Act removing the disqualification on racial grounds from (a) natives of British India and (b) persons who have become naturalized. Disqualification of persons otherwise eligible, either as members or voters, is generally on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on the grounds of holding a place of profit under the Crown, being pecuniarily interested in a Government contract except as a member of an incorporated company of more than twenty-five persons, or being an undischarged bankrupt.

2. **The Federal Government.**—The Senate consists of 36 members, six being returned by each of the original federating States. Members of this Chamber are elected for a term of six years, but by a provision in the Constitution half the members retire at the end of every third year, although they are eligible for re-election. In accordance with the Constitution, the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows :—New South Wales, 28; Victoria, 20; Queensland, 10; South Australia, 7; Western Australia, 5; Tasmania, 5; Northern Territory, 1—total, 76. The Constitution provides for a minimum of five members for each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators, the whole State constitutes the electorate. For the purposes of elections for the House of Representatives, the State is divided into single electorates corresponding in number with the number of members to which the State is entitled. Members of both Houses are paid at the rate of £1,000 per annum. Further information regarding the Senate and the House of Representatives is given in preceding issues.

3. **Federal Elections.**—There have been eleven complete Parliaments since the inauguration of Federation. The fifth Parliament, which was opened on the 9th July, 1913, was dissolved on the 30th July, 1914, in somewhat unusual circumstances. Under Section 57 of the Constitution, it is provided that, should the Senate fail to pass, or pass with amendments, any proposed law previously passed by the House of Representatives, and should the latter House, after an interval of three months, again pass the proposed law, with or without the amendments of the Senate, and the Senate for a second time reject it or pass it with amendments to which the lower House will not agree, then the Governor-General may dissolve the two Houses simultaneously. For the first time in the history of the Commonwealth this deadlock between the Senate and the House of Representatives occurred in the second session of the fifth Parliament, and, in accordance with the section of the Constitution referred to above, both Houses were dissolved by the Governor-General. The first session of the twelfth Parliament opened on the 20th November, 1929. The first meeting at Parliament House, Canberra, was opened by H.R.H. the Duke of York on 9th May, 1927. Particulars regarding Commonwealth elections since 1917 may be found in the table given hereunder:—

FEDERAL ELECTIONS, 1917 to 1929.

Date.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted.		
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.

THE SENATE.

5th May, 1917 ..	1,444,138	1,391,194	2,835,327	1,184,663	1,018,188	2,202,801	82.03	73.18	77.69
13th December, 1919	1,439,818	1,410,044	2,849,862	1,094,534	938,403	2,032,937	76.02	65.55	71.33
16th December, 1922	1,494,508	1,487,916	2,982,424	966,551	761,695	1,728,246	64.67	51.19	57.95
14th November, 1925	1,656,286	1,645,730	3,302,016	1,515,608	1,499,345	3,014,953	91.51	91.11	91.31
17th November, 1928	1,723,552	1,721,214	3,444,766	1,617,752	1,606,748	3,224,500	93.86	93.35	93.61

THE HOUSE OF REPRESENTATIVES.

(CONTESTED ELECTORATES.)

5th May, 1917 ..	1,262,527	1,207,938	2,470,465	1,041,552	892,926	1,934,478	82.50	73.92	78.30
13th December, 1919	1,395,165	1,367,468	2,762,633	1,063,029	914,816	1,977,845	76.19	66.00	71.59
16th December, 1922	1,396,020	1,378,254	2,774,274	920,177	726,686	1,646,863	65.91	52.72	59.36
14th November, 1925	1,635,842	1,632,897	3,268,739	1,499,006	1,488,194	2,987,200	91.63	91.14	91.39
17th November, 1928	1,450,202	1,463,951	2,914,153	1,362,075	1,366,137	2,728,212	93.90	93.32	93.64
12th October, 1929 ..	1,557,525	1,560,505	3,118,030	1,479,100	1,478,447	2,957,547	94.90	94.74	94.85

The percentage of electors who exercised the franchise at each election rose from 53.04 for the Senate and 55.69 for the House of Representatives in 1901 to 77.69 and 78.30 respectively in 1917. The next election in 1919 showed a considerable falling off, and in 1922 the decrease was still more marked, the respective percentages for that year being 57.95 and 59.36, or very little more than those for 1901. Compulsory voting was introduced prior to the election in 1925, and an exceedingly heavy vote was cast in that year. In 1928 the results of the previous election were exceeded, and the exceptional average of nearly 94 per cent. of possible votes was recorded for each House. The highest percentage recorded, however, was in respect of the 1929 House of Representatives election, when 94.85 per cent. of the electors in the contested divisions voted.

4. *Federal Referenda*.—According to Section 128 of the Constitution, any proposed law for the alteration of the Constitution must, in addition to being passed by an absolute majority of each House of Parliament, be submitted to a referendum of the electors in each State, and must further be approved by a majority of the States and of the electors who voted before it can be presented for Royal Assent. Several referenda have been held from time to time, but in three cases only has any proposed law been assented to by the required majority of the electors. A statement dealing with the various referenda up to and inclusive of the year 1919, and the voting thereon was given in previous issues of the Official Year Book (see No. 18, pp. 87 to 89), but space will not permit of the incorporation of this information in the present volume. In the year 1926 a referendum was held in relation to proposed laws entitled respectively "Industry and Commerce" and "Essential Services." The result of the voting was: Industry and Commerce, votes in favour, 1,247,088; votes not in favour, 1,619,655. Essential Services, votes in favour, 1,195,502; votes not in favour, 1,597,793.

A referendum was taken in 1928 in respect of a proposed law entitled "State Debts 1928" and a majority of votes was cast in each State in favour of the proposal, the voting for the Commonwealth being as follows: in favour, 2,237,391; not in favour, 773,852.

5. *The Parliament of New South Wales*.—(i) *Constitution*. The Legislative Council in this State is a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, and the number of members in February, 1930, was ninety-three. The tenure of the seat is for life; four-fifths of the members must be persons not holding any paid office under the Crown, but this is held not to include officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. A Bill for the reconstitution of the Legislative Council is to be submitted to a referendum of the electors on a date to be proclaimed. It provides that the Council shall consist of sixty members who shall be elected at a secret ballot by members of both Houses of Parliament voting as one electoral body. The term of service is to be twelve years, one-fourth of the members to be elected every three years. The Legislative Assembly consists of ninety members elected in single-seat electoral districts, who hold their seats during the existence of the Parliament to which they are elected. The duration of Parliament is limited to three years.

(ii) *Particulars of Elections*. Since the introduction of responsible government in New South Wales there have been twenty-seven complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twenty-seventh was dissolved on the 7th September, 1927. The twenty-eighth Parliament opened on the 3rd November, 1927. The elections of 1920, 1922, and 1925 were contested on the principle of proportional representation, but a reversion to the system of single seats and preferential voting was

made at the last appeal to the people. Particulars of voting at elections from 1917 to 1927 are given below :—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES, 1917 to 1927.

Year.	Electors Qualified to Vote.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1917	574,308	535,522	1,109,830	328,030	295,354	623,384	62.40	60.57	61.52
1920	593,244	561,193	1,154,437	363,115	285,594	648,709	61.21	50.89	56.19
1922	636,662	614,361	1,251,023	466,949	408,515	875,464	73.34	66.49	69.98
1925	678,749	660,331	1,339,080	489,126	435,853	924,979	72.06	66.00	69.07
1927	714,886	694,607	1,409,493	(a)	(a)	1,150,777	(a)	(a)	82.54

(a) Not available.

The principle of one elector one vote was adopted in 1894, and that of compulsory enrolment in 1922.

The franchise was extended to women (Women's Franchise Act) in 1902, and was exercised for the first time at a State election in 1904.

6. The Parliament of Victoria.—(i) *Constitution.* Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of members of each House, as well as in the qualifications necessary for members and electors. The number of members in the Upper House in May, 1930, was 34, and in the Lower House, 65. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one-half of the newly-elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. An elector for the Legislative Assembly may vote once only, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote. A preferential system of voting (see Year Book No. 6, page 1182) was for the first time adopted in Victoria at the election held in November, 1911.

(ii) *Particulars of Elections.* Since the introduction of responsible government in Victoria there have been twenty-nine complete Parliaments, the first of which opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-ninth was dissolved on the 1st November, 1929. The thirtieth Parliament was opened on the 11th December, 1929. The election for the Legislative Assembly in 1927 was the first held since the institution of compulsory voting. Particulars of voting at the elections since 1916 are given in the subjoined table :—

VICTORIAN ELECTIONS, 1916 to 1929.

LEGISLATIVE COUNCIL (LAST ELECTION 1928).

Year.	Electors Enrolled.		Electors Enrolled in Contested Electorates.	Electors who Voted.	Percentage of Electors who Voted in Contested Electorates.
1916	300,321	34,853	37.71
1919	317,593	40,393	30.35
1922	353,440	47,008	29.07
1925	399,510	56,033	32.41
1928	444,278	85,372	31.84

VICTORIAN ELECTIONS, 1916 TO 1929—*continued*.

LEGISLATIVE ASSEMBLY.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1917	397,585	430,645	828,230	172,317	184,682	356,999	54.30	54.12	54.21
1920	418,085	450,763	868,848	232,604	235,621	468,225	66.23	61.38	63.70
1921	414,818	456,638	871,456	167,812	158,415	326,227	61.29	53.53	57.26
1924	433,357	467,070	900,427	190,153	180,810	370,963	63.02	55.72	59.24
1927	480,485	512,726	993,211	377,941	402,458	780,399	92.02	91.51	91.76
1929	496,996	532,174	1,029,170	308,532	330,836	639,368	94.11	93.36	93.72

The franchise was extended to women by the Adult Suffrage Act 1908 and voting at elections for the Legislative Assembly was made compulsory in 1926.

7. The Parliament of Queensland.—(i) *Constitution*. As pointed out previously, the Legislative Council in Queensland was abolished in 1922, the date of Royal Assent to the Act being the 23rd March. The Legislative Assembly is composed of seventy-two members, and the State is divided into that number of electoral districts. A modified system of optional preferential voting is in operation in Queensland. (See Year Book No. 6, page 1183.)

(ii) *Particulars of Elections*. Since the establishment of responsible government in Queensland there have been twenty-four complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the twenty-fourth Parliament was dissolved on the 11th April, 1929. The first session of the twenty-fifth Parliament began on the 20th August, 1929. At the elections held in May, 1915, the principle of compulsory voting was introduced for the first time in Australia. Of the total number of electors enrolled at the 1929 elections, 90.52 per cent. went to the polls. Statistics regarding the last five elections for which details are available are given below :—

QUEENSLAND LEGISLATIVE ASSEMBLY ELECTIONS, 1918 to 1929.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1918	233,342	191,074	424,416	176,768	163,901	340,669	75.75	85.78	80.27
1920	238,750	206,931	445,681	187,575	168,651	356,226	78.57	81.50	79.93
1923	257,001	219,476	476,477	194,287	174,980	369,267	80.72	83.96	82.23
1926	253,571	224,526	478,097	209,139	191,916	401,055	89.77	90.13	89.94
1929	270,327	239,672	509,999	228,601	209,647	438,248	89.69	91.45	90.52

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under the Elections Acts Amendment Act 1905.

8. The Parliament of South Australia.—(i) *Constitution*. In this State there is a Legislative Council composed of twenty members and a House of Assembly with forty-six members, both chambers being elective. The State is divided into five districts, which return four members each to the Legislative Council. For the House of Assembly, eight districts return three members each, and eleven districts two members each.

(ii) *Particulars of Elections*. Since the inauguration of responsible government in South Australia there have been twenty-six complete Parliaments, the first of which was opened on the 22nd April, 1857. The twenty-sixth Parliament opened on the 17th May, 1927, and closed on the 20th February, 1930. The first session of the twenty-seventh Parliament began on the 27th May, 1930. Particulars of voting at recent elections are given below :—

SOUTH AUSTRALIAN ELECTIONS, 1918 to 1930.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
LEGISLATIVE COUNCIL.									
1918	71,510	23,461	94,971	42,987	11,800	54,787	60.11	50.30	57.69
1921	69,986	23,062	93,048	38,597	11,309	49,906	64.23	53.96	61.57
1924	67,429	22,018	89,447	36,626	10,492	47,118	65.79	54.94	63.02
1927	100,376	37,395	137,771	46,686	17,742	64,428	67.55	59.91	65.26
1930	(a)	(a)	133,274	(a)	(a)	100,040	(a)	(a)	75.06

HOUSE OF ASSEMBLY.

1918	126,669	132,043	258,712	71,501	62,742	134,243	56.45	47.52	51.89
1921	134,091	137,931	272,022	91,451	77,600	169,051	70.10	57.64	63.77
1924	141,944	147,899	289,843	87,712	73,453	161,165	69.65	56.05	62.71
1927	152,997	156,591	309,588	110,127	104,611	214,738	80.64	74.31	77.43
1930	(a)	(a)	325,244	(a)	(a)	222,819	(a)	(a)	71.36

(a) Not available.

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under the Constitution Amendment Act 1894), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

9. The Parliament of Western Australia.—(i) *Constitution*. In this State both Chambers are elective. For the Legislative Council there are thirty members, each of the ten Provinces returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral districts. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the junior member for the time being for each province retires. Seniority is determined (a) by the date of election, (b) if two or more members are elected on the same day, then the junior is the one who polled the least number of votes (c) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

(ii) *Particulars of Elections*. Since the establishment of responsible government in Western Australia there have been thirteen complete Parliaments, the first of which was opened on the 30th December, 1890, while the fourteenth Parliament was elected on 12th April, and 10th May, 1930. The preferential system of voting in use in

Western Australia is described in Year Book No. 6, page 1184. Particulars relating to the last five Assembly and Council elections for which particulars are available are given in the tables below :—

WESTERN AUSTRALIAN ELECTIONS.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.

LEGISLATIVE COUNCIL.

1920	37,137	14,900	52,037	12,450	3,406	15,856	45.07	28.28	40.27
1922	40,360	14,838	55,198	17,524	4,763	22,287	46.16	33.81	42.82
1924	43,897	14,904	58,801	16,552	4,569	21,121	47.06	39.25	45.12
1926	39,566	15,120	54,686	23,956	8,136	32,092	60.55	53.80	58.68
1928	54,822	19,076	73,898	24,377	8,151	33,028	51.99	46.75	50.59

LEGISLATIVE ASSEMBLY.

1917	93,106	73,845	166,951	45,453	40,167	85,620	59.46	65.51	62.15
1921	89,523	75,165	164,688	54,747	44,211	98,958	69.16	65.22	67.34
1924	101,717	88,152	189,869	55,591	43,800	99,391	66.00	59.00	62.32
1927	113,072	97,877	210,949	76,307	66,199	142,506	74.32	72.42	73.42
1930	122,576	107,500	230,076	75,206	63,807	139,013	75.44	73.30	74.44

Particulars of the Council election held in May, 1930, will, if available, be found in the Appendix.

Women's suffrage was granted by the Electoral Act of 1899. At the 1921 elections the first woman member elected to an Australian Parliament was returned.

10. The Parliament of Tasmania.—(i) *Constitution.* In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. There are five House of Assembly districts corresponding to the Commonwealth electoral districts, each returning six members, who are elected under a system of proportional representation which first came into force at the 1909 elections. (See Year Book No. 6, page 1185.) The annual salaries of members of the House of Assembly range from £400 to £500, and of the Legislative Council from £370 to £500 according to the area of the electorate and the distance from the capital.

In 1924 and again in 1925 the House of Assembly contested, with at least temporary success, the power of the Legislative Council to amend money bills. The matter was settled by "The Constitution Act 1926," which provides that all money bills shall originate in the Assembly, that all money votes shall be recommended by the Governor, and that the Council may amend bills other than those for appropriating public moneys or fixing a rate for income or land tax. The Council has no power to insert a provision for the appropriation of money or the imposing of a burden on the people.

(ii) *Particulars of Elections.* The first Tasmanian Parliament opened on 2nd December, 1856, and closed on 8th May, 1861. There have been twenty-two complete Parliaments since the inauguration of responsible government. Particulars of the voting at the last five elections for the House of Assembly are given hereunder :—

TASMANIAN ELECTIONS, HOUSE OF ASSEMBLY, 1913 to 1928.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1913	53,372	51,920	105,292	38,700	32,102	70,802	72.51	61.83	67.24
1916	54,466	52,855	107,321	41,427	37,557	78,984	76.06	71.05	73.60
1919	53,205	54,336	107,541	37,037	34,027	71,064	69.61	62.62	66.08
1922	54,958	55,591	110,549	38,457	31,295	69,752	69.96	56.30	63.09
1925	56,667	58,234	114,901	41,322	35,959	77,281	72.92	61.81	67.25
1928	55,058	56,898	111,956	46,769	44,910	91,679	84.94	78.94	81.90

The present members of the Legislative Council have been elected at various dates and the following particulars are given of the last contested election in each case—number of electors on the roll, 48,897; number of votes recorded, male 17,680, female 5,462, total 23,142; percentage of persons who voted to the number on the roll, 49.81.

The suffrage was granted to women under the Constitution Amendment Act 1903, and compulsory voting came into force on the passage of the Electoral Act in 1928.

3. Administration and Legislation.

1. **The Commonwealth Parliaments.**—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the late Marquis of Linlithgow, then Earl of Hopetoun, Governor-General. It was opened on the 9th May following by H.R.H. the Duke of Cornwall and York, who had been sent to Australia for that purpose by His Majesty the King, the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister.

The following table gives the number and duration of Parliaments since Federation :—

COMMONWEALTH PARLIAMENTS, 1901 to 1930.

Number of Parliament.			Date of Opening.	Date of Dissolution.
First	..	..	9th May, 1901 ..	23rd November, 1903
Second	..	..	2nd March, 1904 ..	12th October, 1906
Third	..	..	20th February, 1907 ..	19th February, 1910
Fourth	..	..	1st July, 1910 ..	23rd April, 1913
Fifth	..	..	9th July, 1913 ..	30th July, 1914 (a)
Sixth	..	..	8th October, 1914 ..	26th March, 1917
Seventh	..	..	14th June, 1917 ..	3rd November, 1919
Eighth	..	..	26th February, 1920 ..	6th November, 1922
Ninth	..	..	28th February, 1923 ..	3rd October, 1925
Tenth	..	..	13th January, 1926 ..	9th October, 1928
Eleventh	..	..	6th February, 1929 ..	16th September, 1929
Twelfth	..	..	20th November, 1929 ..	

(a) On this occasion the Governor-General, acting on the advice of the Ministry, and under section 57 of the Constitution, granted a dissolution of both the Senate and the House of Representatives, this being the first occasion since Federation on which a dissolution of both Houses had occurred.

2. **Governors-General and Ministries.**—The following statements show the names of the several Governors-General, and the Ministries which have directed the administration of the affairs of the Commonwealth since its creation :—

(a) **GOVERNORS-GENERAL.**

- Rt. Hon. EARL OF HOPETOUN (afterwards MARQUIS OF LINLITHGOW), P.C., K.T., G.C.M.G., G.C.V.O. Sworn 1st January, 1901; recalled 9th May, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Act. Governor-General). Sworn 17th July, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General). Sworn 9th January, 1903; recalled 21st January, 1904.
- Rt. Hon. HENRY STAFFORD BARON NORTHCOTE, P.C., G.C.M.G., G.C.I.E., C.B. Sworn 21st January, 1904; recalled 8th September, 1908.
- Rt. Hon. WILLIAM HUMBLE EARL OF DUDLEY, P.C., G.C.M.G., G.C.V.O., etc. Sworn 9th September, 1908; recalled 31st July, 1911.
- Rt. Hon. THOMAS BARON DENMAN, P.C., G.C.M.G., K.C.V.O. Sworn 31st July, 1911; recalled 16th May, 1914.
- Rt. Hon. SIR RONALD CRAUFURD MUNRO FERGUSON (afterwards VISCOUNT NOVAR OF RAITH), P.C., G.C.M.G. Sworn 18th May, 1914; recalled 5th October, 1920.
- Rt. Hon. HENRY WILLIAM BARON FORSTER OF LEPE, P.C., G.C.M.G. Sworn 6th October, 1920; recalled 7th October, 1925.
- Rt. Hon. JOHN LAWRENCE BARON STONEHAVEN, P.C., G.C.M.G., D.S.O. Sworn 8th October, 1925.

(b) **MINISTRIES.**

- (i) BARTON GOVERNMENT, 1st January, 1901, to 23rd September, 1903.
- (ii) FIRST DEAKIN GOVERNMENT, 23rd September, 1903, to 26th April, 1904.
- (iii) WATSON GOVERNMENT (Labour), 26th April to 17th August, 1904.
- (iv) REID-McLEAN GOVERNMENT, 17th August, 1904, to 4th July, 1905.
- (v) SECOND DEAKIN GOVERNMENT, 4th July, 1905, to 12th November, 1908.
- (vi) FIRST FISHER GOVERNMENT (Labour), 12th November, 1908, to 2nd June, 1909.
- (vii) THIRD DEAKIN GOVERNMENT, 2nd June, 1909, to 29th April, 1910.
- (viii) SECOND FISHER GOVERNMENT (Labour), 29th April, 1910, to 24th June, 1913.
- (ix) COOK GOVERNMENT, 24th June, 1913, to 17th September, 1914.
- (x) THIRD FISHER GOVERNMENT (Labour), 17th September, 1914, to 27th October, 1915.
- (xi) FIRST HUGHES GOVERNMENT (Labour), 27th October, 1915, to 14th November, 1916.
- (xii) SECOND HUGHES GOVERNMENT (Labour), 14th November, 1916, to 17th February, 1917.
- (xiii) AUSTRALIAN NATIONAL WAR GOVERNMENT, 17th February, 1917, to 10th January, 1918.
- (xiv) AUSTRALIAN NATIONAL WAR GOVERNMENT, 10th January, 1918, to 9th February, 1923.
- (xv) BRUCE-PAGE GOVERNMENT, 9th February, 1923, to 22nd October, 1929.

(c) **SCULLIN GOVERNMENT from 22nd October, 1929.**

DEPARTMENTS.

MINISTERS (1930).

Prime Minister, Minister for External Affairs, and Minister for Industry	Rt. Hon. JAMES HENRY SCULLIN, P.C.*
Treasurer	Hon. EDWARD GRANVILLE THEODORE.*
Vice-President of the Executive Council	Hon. JOHN JOSEPH DALY.
Attorney-General	Hon. FRANK BRENNAN.
Postmaster-General and Minister for Works and Railways ..	Hon. JOSEPH ALOYSIUS LYONS.
Minister for Trade and Customs	Hon. JAMES EDWARD FENTON.
Minister for Home Affairs	Hon. ARTHUR BLAKELEY.
Minister for Health, and Minister in Charge of Repatriation ..	Hon. FRANK ANSTEY.
Minister for Defence	Hon. ALBERT ERNEST GREEN.
Minister for Markets and Transport	Hon. PARKER JOHN MOLONEY.
Assistant Ministers	{ Hon. JOHN BARNES. Hon. FRANCIS MICHAEL FORDE. Hon. JOHN ALBERT BEASLEY.

* The Treasurer resigned office on the 9th July, 1930, and the Prime Minister was sworn in as Treasurer on the same date.

3. **State Ministries.**—The names of the members of the Ministries in each State in May, 1930, are shown in the following statement. The date on which each Ministry was sworn in is stated in parentheses :—

STATE MINISTRIES, 1930.

NEW SOUTH WALES (18th October, 1927).

Premier—

HON. T. R. BAVIN, K.C.

Secretary for Public Works—

HON. E. A. BUTTENSCHAW.

Attorney-General and Vice-President of the Executive Council—

HON. F. S. BOYCE, K.C., M.L.C.

Minister for Lands—

HON. R. T. BALL.

Minister for Agriculture—

HON. H. V. C. THORBY.

Minister for Education—

HON. D. H. DRUMMOND.

Minister for Local Government—

HON. M. F. BRUXNER, D.S.O.

Colonial Secretary—

HON. F. A. CHAFFEY.

Minister of Justice—

HON. J. R. LEE.

Minister for Labour and Industry—

HON. E. H. FARRAR, M.L.C.

Minister for Public Health—

HON. R. ARTHUR, M.D.

Colonial Treasurer—

HON. B. S. B. STEVENS.

Secretary for Mines and Minister for Forests—

HON. R. W. D. WEAVER.

Honorary Minister—

HON. J. RYAN, M.L.C.

VICTORIA (12th December, 1929). (Labour.)

Premier, Treasurer, and Minister of Markets—

HON. E. J. HOGAN.

Chief Secretary—

HON. T. TUNNECLIFFE.

Minister of Public Instruction and Minister of Labour—

HON. J. LEMMON.

President of the Board of Land and Works, Commissioner of Crown Lands and Survey, and Minister of Water Supply—

HON. H. S. BAILEY.

Minister of Railways, Minister in Charge of Electrical Undertakings, and Vice-President of the Board of Land and Works—

HON. J. CAIN.

Minister for Agriculture, Attorney-General and Solicitor-General—

HON. W. SLATER.

Commissioner of Public Works, Minister of Mines, Minister in Charge of Immigration, and Vice-President of the Board of Land and Works—

HON. J. P. JONES, M.L.C.

Minister of Forests, Minister of Public Health, and Vice-President of the Board of Land and Works—

HON. W. J. BECKETT, M.L.C.

Ministers without Portfolio—

HON. R. WILLIAMS, M.L.C.

HON. E. L. KIERMAN, M.L.C.

HON. G. C. WEBBER.

HON. R. T. POLLARD.

QUEENSLAND (21st May, 1929).

Premier, Chief Secretary, and Vice-President of the Executive Council—

HON. A. E. MOORE.

Minister for Public Instruction and Works—

HON. R. M. KING.

Treasurer—

HON. W. H. BARNES.

Home Secretary—

HON. J. C. PETERSON.

Attorney-General—

HON. N. F. MACGROARTY.

Minister for Lands—

HON. W. A. DEACON.

Minister for Agriculture and Stock—

HON. H. F. WALKER.

Minister for Railways—

HON. G. MORGAN.

Minister for Labour and Industry—

HON. H. E. SIZER.

Minister for Mines—

HON. E. A. ATHERTON.

SOUTH AUSTRALIA (17th April, 1930). (Labour.)

Premier, Treasurer, and Minister of Education—

HON. L. L. HILL.

Chief Secretary and Minister of Marine—

HON. J. JELLEY, M.L.C.

Attorney-General, Minister of Local Government, and Minister of Railways—

HON. W. J. DENNY, M.C.

Commissioner of Crown Lands and Minister of Mines—

HON. R. S. RICHARDS.

Commissioner of Public Works, Minister of Industry, and Minister of Labour and Employment—

HON. J. McINNES.

Minister of Agriculture, of Immigration, of Repatriation, and of Irrigation, and Commissioner of Forest Lands—

HON. S. R. WHITFORD, M.L.C.

WESTERN AUSTRALIA (24th April, 1930).

Premier and Treasurer—

HON. SIR J. MITCHELL, K.C.M.G.

Minister for Goldfields and Agricultural Water Supply—

HON. C. F. BAXTER, M.L.C.

Attorney-General—

HON. T. A. L. DAVY.

Minister for Agriculture—

HON. P. D. FERGUSON.

Chief Secretary—

HON. N. KEENAN, K.C.

Minister for Lands—

HON. C. G. LATHAM.

Minister for Works and Metropolitan Water Supply—

HON. J. LINDSAY.

Minister for Mines and Railways—

HON. J. SCADDAN.

TASMANIA (15th June, 1928).

Premier, Treasurer, and Minister Controlling Hydro-Electric Department—

HON. J. C. McPHEE.

Chief Secretary and Minister for Railways and Mines—

HON. C. E. W. JAMES.

Attorney-General and Minister for Education—

HON. H. S. BAKER.

Minister for Lands, Works, Forestry, and Agriculture—

HON. SIR W. H. LEE, K.C.M.G.

Ministers without Portfolio—

HON. A. L. WARDLAW, M.L.C.

HON. C. W. GRANT.

HON. E. HOBBS.

4. *The Course of Legislation.*—The actual legislation by the Commonwealth Parliament up to the end of the 1929 session is indicated in alphabetical order in "Vol. XXVII. of the Acts of the Parliament of the Commonwealth of Australia, passed during the year 1929, with Tables, Appendix, and Indexes." A "Chronological Table of Acts passed from 1901 to 1929, showing how they are affected by subsequent legislation or lapse of time" is also given, and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished. Reference should be made to these for complete information. In previous issues of the Official Year Book an analytic table was included showing the nature of Commonwealth legislation in force at the end of the latest year available. A classified analysis up to the end of the year 1928 will be found in No. 22, pp. 76 to 84, but it has not been found possible to renew the table in the present issue.

5. *Legislation During the Current Year.*—In recent issues of the Official Year Book the plan was adopted of giving a summary of the more important legislative enactments of the Commonwealth and State Parliaments during the current year, but considerations of space preclude the inclusion of this information in the present issue.

§ 4. Cost of Parliamentary Government.

1. **General.**—The following statement shows the cost of parliamentary government in the Commonwealth and in each State, as well as the cost per head of population, for the year ended 30th June, 1929. In order to avoid incorrect conclusions as to the cost of the Governor-General's or Governor's establishment, it may be pointed out that a very large part of the expenditure (with the exception of the item "Governor's salary") under the head of Governor-General or Governor represents official services entirely outside the Governor's personal interests, and carried out at the request of the Government.

COST OF PARLIAMENTARY GOVERNMENT, 1928-1929.

Particulars.	C'with.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
1. Governor-General or Governor—	£	£	£	£	£	£	£	£
Governor's Salary ..	12,000	5,000	5,000	3,000	5,000	3,339	3,000	36,339
Official Secretary's salary ..	..	828	(c)	380	100	350	..	1,658
Clerks, etc. ..	642	379	176	1,334	{ 373	407	..	4,713
Orderlies ..	..	423	666			813	..	
Other messengers ..	..	154	..	..	1,109	..	..	1,263
Wages—Housemaids, stewards, gamekeepers, etc. ..	7,004	1,265	1,339	1,952	..	..	663	12,223
Country residence—								
Gardener ..	..	281	123	..	{ 269	1,359	..	2,913
Other wages ..	..	868						
Furniture, stores, and stationery ..	682	224	267	2,225	{ 686	1,303	1,074	11,577
Postal, cables, etc. ..	1,112	115	253					
Travelling expenses and conveyance of officers ..	3,202	10	..	..	..	..	..	..
Incidental expenses (country residence) ..	..	213	142	..	20	..	..	..
Other expenses ..	£14,905	416	2,099	431	2,743	1,327	200	22,121
Allowance to Lieut.-Governor ..	..	..	..	1,000	..	661	..	1,661
Total ..	39,547	10,176	10,065	10,322	10,362	9,059	4,937	94,468
2. Executive Council—								
Salaries of Officers ..	(a)	839	520	30	..	100	(g)	1,489
Other expenses ..	(a)	..	71	80	..	..	(g)	151
Total ..	(a)	839	591	110	..	100	(g)	1,640
3. Ministry—								
Salaries of Ministers ..	15,300	23,414	10,000	12,814	7,750	8,200	5,250	82,728
Ministerial functions ..	(b)	..	(b)	..	151	2,355	317	2,823
Special Reports for Cabinet ..	(b)	50	(b)	..	..	..	..	50
Premiers' Conference ..	177	233	(b)	..	98	242	1,160	11,870
Travelling expenses ..	7,078	..	(b)	..	334	2,548		
Total ..	22,555	23,697	10,000	12,814	8,333	13,345	6,727	97,471
4. Parliament—								
A. Upper House :								
President and Chairman of Committees ..	2,000	1,900	1,149	..	800	1,800	300	7,949
Allowance to members ..	35,542	..	5,961	..	6,699	13,500	7,770	74,472
Railway passes ..	5,760	18,213	(d) 8,500	..	1,212	5,776	998	40,459
Postage for members ..	1,059	40	(e)	..	19	140	(b)	1,258
B. Lower House :								
Speaker and Chairman of Committees ..	2,000	2,790	2,129	1,898	1,400	1,800	350	12,367
Allowance to members ..	73,719	69,378	28,406	45,436	16,000	26,393	12,300	271,632
Railway passes ..	12,160	18,396	(f)	(f)	2,788	11,546	1,610	46,500
Postage for members ..	2,799	2,692	(d) 900	1,462	231	340	..	8,424
Carried forward ..	135,039	113,409	47,045	48,796	29,149	60,295	23,328	463,061

COST OF PARLIAMENTARY GOVERNMENT—*continued.*

Particulars.	C'wth.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
Brought forward ..	135,039	118,409	47,045	48,796	29,149	66,295	23,328	463,061
4. Parliament—continued.								
<i>C. Both Houses :</i>								
Standing Committee on Public Works—								
Remuneration of members ..	2,000	4,992	1,497	..	1,892	..	185	10,566
Salaries of Staff and contingencies ..	2,250	3,004	1,665	..	1,715	..	..	8,632
Printing—								
<i>Hansard</i>	7,313	6,865	5,476	2,889	1,802	2,518	..	26,863
Other	17,625	12,145	8,501	2,967	5,907	983	3,964	52,092
Parliamentary reporting staff—								
Salaries	12,179	10,099	6,702	2,781	5,700	4,118	..	41,579
Contingencies ..	173	..	60	..	122	126	..	481
Library—								
Salaries	5,814	2,875	1,792	1,156	780	100	(h)	12,517
Contingencies ..	3,122	986	998	596	515	275	(h)	6,492
Salaries of other officers and staff	35,444	26,983	15,755	6,726	4,917	6,992	2,890	99,707
Travelling expenses of officers and staff	560	(b)	..	..	..	..	(h)	560
Other	11,266	(b)	..	..	185	..	(h)	11,451
<i>D. Miscellaneous—</i>								
Fuel, light, heat, power, water	2,248	(b)	783	2,688	1,095	{ (b) }	{ (b) }	74,454
Posts, telegraphs, telephones	791	(b)	1,409	344	396			
Furniture, stores, and stationery	2,618	1,194		250	408			
Other	145,702	2,459		3,612	3,394			
Total	284,144	185,011	93,017	72,805	57,975	83,984	31,519	808,455
5. Electoral—								
Salaries	80,978	2,456	919	3,404	3,695	2,637	(g)	94,179
Cost of elections, contingencies, etc.	165,282	58,131	17,627	32,287	5,021	1,199	2,834	282,881
Total	246,260	60,587	18,546	35,781	8,716	3,836	2,834	376,560
6. Royal Commissions, Select Committees, etc., including fees and other expenses of Commissioners, fees of counsel, costs incurred by Ministers, cost of overtime worked by Departments preparing information, bonuses, etc.								
	22,335	2,452	547	2,293	235	1,285	..	29,147
Total	22,335	2,452	547	2,293	235	1,285	..	29,147
GRAND TOTAL ..	614,841	282,762	132,766	184,125	85,621	111,609	46,017	1,407,741
Cost per head of population ..	1s. 11d.	2s. 4d.	1s. 6d.	2s. 11d.	2s. 11d.	5s. 6d.	4s. 3d.	4s. 5d.

(a) Included under Governor-General. (b) Not available separately. (c) Included under Executive Council. (d) Both Houses. (e) Included under Lower House. (f) Included under Upper House. (g) Duties performed by Chief Secretary's Department. (h) Included under Miscellaneous, etc. (i) Members of the Legislative Assembly and ex-members of the Legislative Council have passes for the whole of the State. (k) Includes rent of buildings, Melbourne and Canberra, £10,500. (l) Includes interest and sinking fund, Parliament House, Canberra, £31,953.

Figures showing total cost and cost per head during each of the last five years are given in the next table.

COST OF PARLIAMENTARY GOVERNMENT, 1924-25 TO 1928-29.

Year.	C'with.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
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TOTAL.

	£	£	£	£	£	£	£	£
1924-25 ..	404,021	288,331	115,026	86,408	81,409	92,338	37,478	1,105,611
1925-26 ..	511,474	229,246	121,415	107,166	94,130	103,371	40,240	1,207,042
1926-27 ..	530,414	248,744	148,816	109,887	106,703	115,383	37,258	1,297,205
1927-28 ..	473,288	302,880	128,507	115,118	89,166	118,190	49,266	1,276,415
1928-29 ..	614,841	282,762	132,766	134,125	85,621	111,609	46,017	1,407,741

PER HEAD OF POPULATION.

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1924-25 ..	1 4	2 7	1 7	2 1	3 0	5 1	3 5	3 9
1925-26 ..	1 8	1 11	1 5	2 5	3 4	5 5	3 9	3 11
1926-27 ..	1 9	2 1	1 9	2 6	3 9	6 1	3 6	4 3
1927-28 ..	1 6	2 6	1 6	2 7	3 1	6 0	4 7	4 1
1928-29 ..	1 11	2 4	1 6	2 11	2 11	5 6	4 3	4 5

§ 5. Strength of the Civil Service.

The strength of the permanent Civil Service at a definite point of time is not available, as the dates to which annual records are made up vary in different State Departments. The following table excludes temporary (except railways and Government tramways) and part-time officers (registrars of births and deaths, postal contractors, etc.); naval, air, and military employees; and certain others, such as those employed in State trading undertakings:—

CIVIL SERVICE—NUMBER OF PERMANENT OFFICERS, 1928-29.

State, etc.	Railways and Tramways (a).		Police.		Teachers.		Other Departments.		Total Persons.
	M.	F.	M.	F.	M.	F.	M.	F.	
Commonwealth ..	1,724		13	..	..	..	25,339	3,425	30,501
New South Wales ..	58,011		3,439	5	4,994	7,008	6,447	1,714	81,618
Victoria ..	32,733		2,108	4	3,529	5,922	3,265	841	48,402
Queensland ..	20,945		1,125	..	1,907	2,332	4,809	1,399	32,517
South Australia ..	9,094		789	12	1,381	2,194	1,571	162	15,203
Western Australia ..	9,828		544	5	721	1,446	1,445	275	14,264
Tasmania ..	1,595		238	1	367	989	621	180	3,991
Northern Territory ..	(b)		39	..	5	8	(b)	(b)	52
Australia {	(c)	(c)	8,295	27	12,904	19,899	43,497	7,996	226,548
	133,930		8,322		32,803		51,493		

(a) Salaried and wages staff; includes temporary employees—Municipal Tramways excluded.
 (b) Included with Commonwealth. (c) Not available.

§ 6. Consular Representatives of Foreign Countries in Australia.

The following tabular statement shows the number of consular representatives of foreign countries in each State for the year 1930 :—

CONSULAR REPRESENTATIVES IN AUSTRALIA, 1930.

Country.	Number of Consular Representatives in—						
	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total Aust.
Argentine Republic	1	1	..	1	..	1	4
Austria	1	1	..	..	..	..	2
Belgium	3	1	1	1	1	1	8
Bolivia .. .. .	..	..	1	..	..	..	1
Brazil	2	1	..	..	..	1	4
Chile	1	1	..	1	..	..	3
China	1	1	..	..	..	..	2
Colombia	2	1	..	..	..	..	3
Costa Rica	2	..	..	..	..	..	2
Czecho-Slovakia	2	1	..	1	1	..	5
Denmark	3	2	3	2	2	1	13
Ecuador	2	..	..	..	..	..	2
Estonia	1	..	..	..	..	..	1
Finland	1	1	1	1	1	..	5
France	3	1	1	1	1	1	8
Germany	4	..	..	1	1	..	6
Greece	2	..	1	..	2	..	5
Guatemala .. .. .	..	1	..	..	..	..	1
Honduras .. .. .	..	1	..	..	..	..	1
Italy	1	2	4	1	1	1	10
Japan	2	2	1	1	1	..	7
Jugo-Slavia	1	..	..	..	1	..	2
Latvia .. .. .	..	..	1	1	..	..	2
Liberia	1	..	..	1	..	..	2
Mexico	1	..	..	..	..	..	1
Netherlands	3	1	5	1	1	1	12
Nicaragua .. .. .	..	1	..	..	..	..	1
Norway	3	2	2	3	3	2	15
Panama	1	1	1	..	..	..	3
Paraguay	1	..	..	..	1	..	2
Peru	2	1	..	1	..	..	4
Poland	1	..	..	..	..	..	1
Portugal	1	1	1	..	..	..	3
Roumania	1	..	..	..	..	..	1
Salvador .. .. .	..	1	..	..	..	..	1
Siam	1	..	..	..	..	..	1
Spain	2	2	1	1	1	..	7
Sweden	3	1	3	3	2	1	13
Switzerland	1	1	1	..	..	..	3
U.S.A.	5	2	2	1	1	..	11
Uruguay	1	1	..	..	..	..	2
Venezuela	1	..	..	..	..	..	1
Total	64	33	30	23	21	10	181a

(a) In addition, Northern Territory has a Consul for the Netherlands, and New Guinea a Consul for Sweden.

Countries having Consuls-General in Sydney are Belgium, Chile, China, Costa Rica, Denmark, Ecuador, France, Germany, Greece, Italy, Japan, Netherlands, Norway, Paraguay, Poland, Siam, Sweden, and United States. Those having Consuls-General in Melbourne are Colombia, Honduras, and Peru.

CHAPTER IV.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **General.**—The construction and maintenance of roads, bridges and ferries are generally part of the functions of local authorities, but in New South Wales and South Australia, more especially in the large unincorporated areas, these duties are undertaken directly by the Government. In some States, moreover, a certain proportion of the roads and bridges is constructed and maintained by the Government, which, in addition, advances money for main roads to be expended by municipalities under the supervision of special Boards. Although roads, bridges and ferries constructed and maintained directly by Government do not properly come under the heading of "Local Government," they have been included in this chapter for the sake of convenience.

2. **Municipalities, Shires, etc.**—A description of the various systems of municipal government in the different States, and their development from the earliest date, was published in 1919 by the Commonwealth Bureau of Census and Statistics in a separate work entitled "Local Government in Australia." Limits of space preclude the incorporation of the information contained therein in the Official Year Book.

3. **Water Supply and Sewerage.**—In the cities of Sydney and Melbourne the control of water supply and sewerage is in the hands of special Boards, while in Adelaide and Perth these services are under the direct supervision of Government Departments. In most of the other cities and towns, the municipal councils, or, in some cases, water trusts, are the controlling bodies which either construct the works out of their own resources or take them over after they have been constructed by the Government.

4. **Harbours.**—The majority of the harbours in Australia are managed by Boards, the members of which are either elected by persons interested or appointed by the Government. In a few instances, however, they are directly controlled by the Government. Only those which are controlled by Boards are dealt with in the following pages.

5. **Fire Brigades.**—In all the States, the management of fire brigades is undertaken by Boards. The members of these Boards are usually elected by the councils of municipalities and insurance companies within the districts placed under their jurisdiction, together with one or more appointed by the Government. Occasionally volunteer or country fire brigades are represented.

§ 2. Government Roads, Bridges, Etc.

1. **New South Wales.**—(i) *General.* The control of all roads, bridges and ferries with the exception of those proclaimed as "National" and of those in the unincorporated areas of the Western Division, which still remain under its jurisdiction, was transferred, in 1920, from the Public Works Department to local authorities. The Government has also adopted the policy of assisting municipal and shire councils to recondition certain main roads by doing the work in the first instance, and recovering in instalments from the councils concerned one-half of the cost.

(ii) *Roads, Bridges and Ferries.* At the 30th June, 1927, the "National" works consisted of 58 miles of roads, 288 bridges with a total length of 108,293 feet, and 18 ferries, while in the unincorporated areas of the Western Division there were 5,688 miles of roads (of which 177 miles were metalled or ballasted, 220 formed only, and 2,932 cleared only), 96 bridges of a total length of 13,495 feet, 489 culverts, and 6 hand punts under the control of the Public Works Department.

(iii) *Expenditure on Roads, Bridges and Ferries.* The total expenditure by the Government during 1928-29 was £4,438,612, comprising expenditure from votes of the Public Works Department £479,662, from funds of the Main Roads Board £3,627,439 and endowments and grants to Councils from votes of the Local Government Department £331,511.

The Government expenditure in connexion with the Sydney Harbour Bridge, £1,466,224 in 1928–29 and £4,815,132 to the 30th June, 1929, is not included in these figures. Of the total sum expended to date, £3,920,208 was provided by General Loan Account and the balance from proceeds of municipal and shire rates.

2. *Victoria.*—(i) *General.* A small sum is expended annually by the State Government on roads and bridges, and a considerable amount of loan money is advanced in each year to the Country Roads Board for the purpose of constructing and maintaining main and developmental roads, the amount so expended during the year ending 30th June, 1928, being £382,896, and in 1928–29, £746,254. An annual payment of £50,000 is also made out of Consolidated Revenue to the Board for maintenance works.

(ii) *Direct Expenditure by Government.* The amount of money expended directly by the Government on roads and bridges during the year 1928–29 was £107,079.

(iii) *Country Roads Board.* The duties of this Board were given in some detail in Year Book No. 15, p. 526.

Loans to the amount of £4,822,000 have been authorized from time to time for permanent works under the Country Roads Acts. One half of the amount expended on permanent works and one-third of the amount expended on maintenance must be refunded by the municipalities affected, 6 per cent. of the amount due in respect of permanent works being payable annually, and the cost of maintenance allocated to each municipality must be paid before the 1st of July in each year. A special rate, not exceeding 6d. in the pound, may be levied in any ward or riding of a municipality for the purpose of such repayment.

All registration fees, licence fees and fines under the Motor Car Act, all licence fees and fines under the Motor Omnibus Act, all licence fees for unused roads and water frontages, and all registration fees and fines for traction-engines are credited to the Country Roads Board Fund. The total loan expenditure for permanent works to the 30th June, 1929, was £4,389,470. Respecting permanent and maintenance works for the year ended 30th June, 1929, the total revenue of the Board was £1,562,864, made up as follows:—Motor registration and licence fees £1,059,821; unused roads, etc., licence fees £24,710; contributions by municipalities for permanent works £115,958, and for maintenance works £165,476; and other sources £196,899. The expenditure for the year was £1,135,023, comprising permanent works £222,924 and maintenance works £912,099.

(iv) *Developmental Roads.* For the purpose of constructing and maintaining subsidiary or developmental roads, the Government has been authorized to borrow sums aggregating £6,475,000. The work is carried out under the supervision of the Country Roads Board, and the State provides the whole of the money and makes provision out of State funds for liquidating the liability; the municipalities, however, are required to bear a proportion of the interest on the outlay during the period of the loan and to maintain the roads when constructed. The amount expended during the year ended 30th June, 1929, was £531,161, and the total expenditure to that date was £5,454,049.

3. *Queensland.*—Under “The Main Roads Act of 1920” a Main Roads Board was constituted, consisting of three members appointed by the Governor in Council. Subsequently the Board was abolished and its powers conferred upon a single Commissioner.

The duties of the Commissioner, as defined by “The Main Roads Acts, 1920 to 1929,” are to carry out such surveys and investigations as are deemed necessary or expedient to determine what roads shall be main, developmental or tourist roads or state highways, and, under certain circumstances, to undertake the construction and maintenance of such roads. Before any road can be proclaimed a main, developmental or tourist road the Local Authorities through whose areas such road passes have the right to lodge objections thereto, and the Commissioner must consider such objections and, if necessary, vary his decision. No such action is necessary in the case of state highways.

Local Authorities are not liable for the return of any expenditure for construction on State Highways or on arterial roads declared under the Federal Aid Roads Act. They are, however, responsible for 50 per cent. of maintenance of the former and 33½ per cent. of the latter roads.

At 30th June, 1929, there were 6,612 miles of roads gazetted in the State, comprising 6,196 miles of main and 416 miles of developmental roads; 1,074 miles of roadway and 17,175 lineal feet of bridges had been completed at that date, and 139 miles of road and 4,725 lineal feet of bridges were in course of construction.

During the year ended 30th June, 1929, the receipts of the Commission amounted to £1,300,540, including £346,596 from the Treasury Loan Fund, £448,336 from motor fees and £367,292 from the Commonwealth for works under the Federal Aid Road scheme. Disbursements amounted to £1,347,015, including £223,272 on permanent works, £684,932 on works under the Federal Aid Roads scheme and £165,410 on the maintenance of roads.

4. *South Australia.*—The Highways Act 1926 created a Commissioner of Highways and provided for a Main Roads Fund. The Commissioner is virtually empowered to determine upon which roads he will spend the moneys available, in doing which he has to take into account (a) the moneys voted, or likely to be voted, by Parliament for main roads; (b) whether the road is or will be the main trunk route: (i) connecting any large producing area, or any area capable of becoming in the near future a large producing area, with its market or nearest port or railway station; (ii) connecting two or more large producing areas, or areas capable of becoming in the near future large producing areas, or between two or more large centres of population; (iii) between the capital and any large producing area or any large centre of population; (iv) between the capitals of this State and any other State; and (c) whether the area through which the road passes is, or in the near future will be, sufficiently served by a railway or railways.

The Main Roads Fund is to be credited with (a) licence fees and registration fees under the Motor Vehicles Acts 1921 to 1929; (b) licence fees under the Vehicles (Licensing) Act 1925; (c) fines, penalties, and forfeitures in respect of convictions for offences against the Motor Vehicles Acts (exclusive of any sum received for costs), or the Width of Tires Acts; (d) fees for hawkers' licences issued by the Treasurer; (e) contributions from Councils; (f) all sums appropriated by Parliament for main roads; (g) all loans raised and appropriated for main roads.

The expenditure from the Main Roads Fund for the year ended 30th June, 1929, was £886,033; grants in aid of rates collected paid to Councils amounted to £143,101. In the sparsely-settled districts outside the incorporated areas, the roads and bridges are constructed and maintained by the Public Works Department which expended during the same period £27,629.

5. *Western Australia.*—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State are under the control of municipalities and district road boards which are subsidized by the Government.

6. *Tasmania.*—(i) *Construction.* In Tasmania the cost of construction of roads and bridges is borne almost entirely by the State Government.

Up to the 30th June, 1929, the loan expenditure on these works was £4,752,167 (roads, £3,952,707; tracks, £231,140; bridges, £568,320). In addition, half the proceeds of the sale of land has formed a Crown Lands Fund for the construction of roads to new holdings. Under this provision £679,383 has been expended. This fund has in recent years more than met the demands on it, and expenditure therefrom since 1918 has been limited to £10,000 annually, the balance being used for redemption of debt.

The Government loan expenditure during the year 1928–29 on the construction of roads and bridges was £204,546, and expenditure from the Crown Lands Fund £2,755. In addition, the sum of £107,152 provided by the Commonwealth Government was expended on roads; the conditional expenditure by the State Government is included in the above figures. The amount of new-road mileage for the year was 95 miles cleared and 129 miles metalled, including 31 and 18 miles respectively constructed out of Federal and State votes under the Federal Aid Roads scheme. Fourteen new bridges also were constructed during the year.

(ii) *Maintenance.* The maintenance of roads and bridges is undertaken by the municipalities with some assistance from the State Government, chiefly by way of subsidy. Under the Aid to Road Rates Act, a sum of £11,000 is distributed annually among the municipalities, in proportion as the cost of maintenance falls on their resources. Under the Main Roads Maintenance Act 1918 a further sum of £5,000 was provided out of Consolidated Revenue, which, with the addition of the motor tax, less 5 per cent., and a contribution from municipalities, is expended on the upkeep of main roads. In 1929–30 the amount available for 1,050 miles of main road was £64,845.

7. **Summary of Loan Expenditure on Roads and Bridges.**—Figures showing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of loan expenditure by the State Governments up to the 30th June, 1929 :—

**ROADS AND BRIDGES.—GOVERNMENT LOAN EXPENDITURE TO THE
30th JUNE, 1929.**

Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Total to 30/6/29	11,713,606	10,666,338	3,084,138	3,243,049	1,660,471	4,752,167	35,119,769

The following table shows the annual expenditure from loans on roads and bridges by the central Governments in each State during the years 1924–25 to 1928–29 :—

ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATES, 1925 TO 1929.

Year Ended 30th June.	N.S.W.	Victoria.	Q'land. (a)	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1925 ..	750,907	1,177,826	200,000	132,268	92,606	130,872	2,484,479
1926 ..	972,793	1,155,087	356,517	246,908	96,835	192,469	3,020,609
1927 ..	1,726,420	1,104,345	313,121	475,601	184,911	144,327	3,948,725
1928 ..	2,558,070	917,540	262,203	144,866	364,223	176,118	4,423,020
1929 ..	3,124,075	802,306	342,152	20,033	384,685	204,546	4,877,797

(a) Includes expenditure on main roads through local authorities.

The two tables given above show only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (a) there have been large expenditures from revenue both by the central Governments and by local authorities, and (b) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction.

§ 3. Municipalities, Shires, Etc.

1. **New South Wales.**—(i) *General.* Practically the whole of the State, with the exception of the Western Division, has been divided into municipalities and shires, the total area incorporated at the end of 1928 being 184,558 square miles, of which 2,508 square miles are included in the former and 182,050 in the latter. The areas incorporated comprise the whole of the Eastern and Central Divisions of the State, with the exception of Lord Howe Island, the islands in Port Jackson, and the quarantine station at Port Jackson.

(ii) *Municipalities.*—(a) *Summary.* The following table gives the number, area and population of municipalities, together with the length of roads and the number of bridges and ferries therein for the year 1928 :—

MUNICIPALITIES, NEW SOUTH WALES.—SUMMARY, 1928.

Year.	No. of Municipali- ties.	Sydney and Suburbs.		Country.		Length of Roads.	Bridges.	Ferries.
		Area.	Population.	Area.	Population.			
		Acres.	No.	Acres.	No.	Miles.	No.	No.
1928	181	116,183	1,127,470	1,488,919	615,530	10,229(a)	645(a)	38(a)

(a) Year 1927—collected triennially.

Of the 10,229 miles of roads, 5,026 were blocked, metalled, ballasted or gravelled, 2,006 formed only, and 1,846 cleared only, while 1,351 miles were natural surface.

(b) *Unimproved and Improved Values.* The table hereunder gives a comparison of the unimproved and improved values for the year 1928 :—

MUNICIPALITIES, NEW SOUTH WALES.—CAPITAL VALUES, 1928.

Year.	Sydney.	Suburbs.	Total Metropolis.	Country.	Grand Total.
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UNIMPROVED VALUE.

	£	£	£	£	£
1928	63,450,804	91,823,567	155,274,371	45,674,380	200,948,751

IMPROVED VALUE.

	£	£	£	£	£
1928	190,999,120	266,716,280	457,715,400	137,439,540	595,154,940

(c) *Revenue and Expenditure.* Particulars of the revenue and expenditure of municipalities for the year ending 31st December, 1928, under various headings, are given below:—

MUNICIPALITIES, NEW SOUTH WALES.—REVENUE AND EXPENDITURE, 1928.

Particulars.	Sydney.	Suburbs.	Country.	Total.
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REVENUE.

	£	£	£	£
General fund	4,063,853 (a)	2,722,052	1,603,217	4,325,269 (b)
Trading accounts		58,664	1,086,219	1,144,883 (b)
Special and local funds		124,242	431,547	555,789 (b)
Gross revenue	4,063,853	2,904,958	3,120,983	10,089,794

EXPENDITURE.

General fund	4,099,618 (a)	3,411,115	1,793,522	5,204,637 (b)
Trading accounts		53,359	939,867	993,226 (b)
Special and local funds		160,489	394,347	554,836 (b)
Gross expenditure	4,099,618	3,624,963	3,127,736	10,852,317

(a) Items of revenue and expenditure for the city of Sydney cannot be allocated to the different headings shown for municipalities. (b) Exclusive of Sydney.

(d) *Assets and Liabilities.* The financial position of the municipalities as at the 31st December, 1928, is shown by the following statement of assets and liabilities.

MUNICIPALITIES, NEW SOUTH WALES.—ASSETS AND LIABILITIES, 1928.

Particulars.	Sydney.	Suburbs.	Extra Metro- politan.	Country.	Total.
ASSETS.					
Bank balances and cash..	£	£	£	£	£
Outstanding rates ..	31,359,686(a)	572,424	43,042	619,450	1,235,816 (b)
Sundry debtors ..		168,639	46,367	199,284	414,290 (b)
Stores and materials ..		193,697	27,344	336,636	557,677 (b)
Land, buildings, furniture, etc. ..		50,831	5,951	119,080	175,862 (b)
Other..		1,633,314	210,366	6,626,639	8,470,319 (b)
		268,310	61,532	107,396	437,238 (b)
Total ..	31,359,686	2,887,215	395,502	8,008,485	42,650,888

LIABILITIES.					
Loans, outstanding interest and sundry creditors ..	30,720,200(a)	4,881,855	442,222	2,881,153	8,155,230 (b)
Debts due to Government and interest thereon ..		103,190	16,191	2,907,545	3,026,926 (b)
Bank overdrafts ..		401,215	25,660	319,412	746,287 (b)
Other ..		69,184	6,033	81,522	156,739 (b)
Total ..	30,720,200	5,455,444	490,106	6,139,682	42,805,382

(a) Particulars for the city of Sydney cannot be allocated to the different headings shown for municipalities. (b) Exclusive of Sydney.

(iii) *Shires.*—(a) *Summary.* The following table gives the number, area, population, and unimproved capital value of shires, together with the length of the roads, and the number of bridges and ferries therein. It is not possible to give the improved capital value or the assessed annual value, as shires are not compelled to make these valuations.

SHIRES, NEW SOUTH WALES.—SUMMARY, 1928.

Year.	No. of Shires.	Area.	Population.	Unimproved Capital Value.	Length of Roads.	Bridges.	Ferries.
1928 ..	No. 138	sq. miles. 182,050	No. 688,950	£ 158,551,171	miles. 93,482(a)	No. 3,943(a)	No. 173(a)

(a) Year 1927—collected triennially.

Of the 93,482 miles of roads, 19,693 were metalled or ballasted, 14,937 formed only, and 29,992 cleared only, the balance being natural surface.

(b) *Revenue and Expenditure.* The revenue and expenditure of shires for the year 1928 are shown in the following table. Included in the receipts are Government grants amounting to £1,270,696 :—

SHIRES, NEW SOUTH WALES.—REVENUE AND EXPENDITURE, 1928.

Particulars.	Revenue.	Particulars.	Expenditure.
	£		£
<i>General Fund—</i>		<i>General Fund—</i>	
General rates (including interest) ..	1,333,375	Administrative expenses	221,909
Government endowment ..	261,315	Public works ..	2,456,868
Public works ..	1,099,906	Health administration ..	128,110
Health administration ..	121,456	Public services ..	45,609
Public services ..	17,228	Shire property ..	13,500
Shire property ..	32,912	Miscellaneous (a) ..	127,172
Miscellaneous ..	21,622	<i>Special, Local, and Loan Funds</i> ..	318,361
<i>Special and Local Funds</i> ..	351,558		
Total revenue ..	3,239,372	Total expenditure ..	3,311,529

(a) Includes interest on loans and overdraft—£73,228.

(c) *Assets and Liabilities.* The finances of the shires at the end of the year 1928 showed an excess of liabilities of £38,969. The following table gives particulars of assets and liabilities as at the 31st December, 1928 :—

SHIRES, NEW SOUTH WALES.—ASSETS AND LIABILITIES, 1928.

Assets.	Amount.	Liabilities.	Amount.
	£		£
Bank balances and cash ..	460,257	Loans outstanding, interest and sundry creditors ..	1,486,477
Outstanding rates ..	237,612	Bank overdrafts ..	478,802
Sundry debtors ..	134,913	Other ..	187,302
Stores and materials ..	63,600	Debts due to the Government and interest thereon ..	422,618
Land, buildings, furniture, plant, machinery, etc. ..	1,626,984		
Other ..	6,864		
Total ..	2,530,230	Total ..	2,569,199

2. *Victoria.*—(i) *General.* Local Government is established throughout the State, the various divisions being termed cities, towns, boroughs, or shires. Melbourne and Geelong were incorporated under special statutes prior to the establishment of a general system of local government, and except in a few details are not subject to the provisions of the Local Government Act.

The financial years of the cities of Melbourne and Geelong end on the 31st December and the 31st August respectively ; those of all other municipalities on the 30th September.

(ii) *Municipalities.* (a) *Summary.* The following table shows the number of cities, towns, boroughs, and shires, with estimated population, number of ratepayers and dwellings, and value of rateable property for the year 1929 :—

MUNICIPALITIES, VICTORIA.—SUMMARY, 1929.

Year ending 30th September.	Number of Municipal- ities.	Estimated Population.	Number of Ratepayers (both sexes).	Estimated Number of Dwellings.	Estimated Value of Rateable Property.		
					Total.	Annual.	
CITIES, TOWNS, AND BOROUGHES.							
1929	..	No. 56	No. 1,170,390	No. 333,364	No. 269,926	£ 373,880,729	£ 20,984,591
SHIRES.							
1929	..	140	656,600	270,176	159,187	288,008,585	14,447,193

(b) *Revenue and Expenditure.* The table hereunder shows the revenue from various sources, and the expenditure under various heads of municipalities during the year 1928:—

MUNICIPALITIES, VICTORIA.—REVENUE AND EXPENDITURE, 1928.

Items.		Revenue.	Items.		Expenditure from Revenue.
		£			£
Taxation	Rates	3,772,864	Salaries, etc.		459,718
	Licences	161,786	Sanitary work, street cleaning, etc.		502,486
	Dog fees	30,258	Lighting		170,721
	Market and weigh-bridge dues ..	132,977	Fire brigades' contributions		72,857
Government endowments and grants		154,316	Public Works { Construction		415,119
Contributions for streets, etc.		352,214	{ Maintenance		2,195,110
Sanitary charges		204,996	Electric Light and Gas Works		877,374
Rents		145,654	Formation of private streets, etc.		512,586
Electric light and gas works		1,224,565	Redemption of loans		291,628
Other sources		665,737	Interest on loans		661,809
Total Revenue		6,845,367	Charities		39,858
Loans		1,709,299	Other expenditure.. ..		773,405
Total Receipts		8,554,666	Total from Revenue..		6,972,671

Items.		Expenditure from Loans.
		£
Roads and Bridges		822,863
Water and Irrigation		18,968
Sewerage and Drainage		40,261
Electric Light and Gas		224,740
Public Buildings		152,823
Other purposes		496,827
Total from Loan		1,756,482
Grand Total		8,729,153

(c) *Assets and Liabilities.* The assets of municipalities may be classified under three heads (a) the municipal fund, (b) the loan fund and (c) property; the liabilities under two heads—(a) the municipal fund, and (b) the loan fund. The following table shows the amount of municipal assets and liabilities for the year 1928 :—

MUNICIPALITIES, VICTORIA.—ASSETS AND LIABILITIES, 1928.

Items.	Assets.	Items.	Liabilities.
MUNICIPAL FUND—	£	MUNICIPAL FUND—	£
Uncollected rates ..	381,133	Arrears due sinking funds	638
Other assets ..	1,645,603	Overdue interest ..	12,415
LOAN FUND—		Bank overdrafts ..	1,249,262
(a) Sinking funds—		Other liabilities ..	1,031,115
Amount at credit ..	626,613	LOAN FUND—	
Arrears due ..	638	Loans outstanding ..	11,391,767
(b) Unexpended balances ..	597,121	Due on loan contracts ..	226,026
PROPERTY—		Due on current contracts..	120,397
Buildings, markets, etc. ..	5,782,860		
Waterworks ..	371,680		
Gasworks ..	203,370		
Electric Light Works ..	2,393,810		
Total ..	12,002,833	Total ..	14,031,620

3. *Queensland.*—(i) *General.* The whole of the State (except islands along the coast and 606 square miles in area) is incorporated into cities, towns, and shires under the Local Authorities Act of 1902 and its amendments.

(ii) *Municipalities.* (a) *Summary.* The following table gives particulars of the area, population, number of inhabited dwellings, and assets and liabilities of cities and towns and of shires for the year 1928 :—

MUNICIPALITIES, QUEENSLAND.—SUMMARY, 1928.

Year.	No.	Area.	Popula- tion.	Number of Inhabited Dwellings.	Rateable Value.	Assets.	Liabilities.	
							Govern- ment Loans.	Total.

CITIES AND TOWNS.

		sq. miles.	No.	No.	£	£	£	£
1928(a) ..	28	843	(b)	109,144	31,153,917	19,416,228	6,289,805	22,185,743

SHIRES.

1928(a) ..	124	669,051	(b)	87,690	48,852,842	1,822,294	1,544,459	2,337,043
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(a) Figures relating to assets and liabilities include waterworks, sewerage works, electric light works, and railways and tramways controlled by local authorities. The Metropolitan Water Supply and Sewerage was taken over by the Brisbane City Council on the 2nd April, 1928.

(b) Estimated population of Queensland, 916,689 persons.

(b) *Revenue and Expenditure.* The revenue and expenditure (including loan moneys) of cities and towns, and of shires for the year 1928 are given hereunder :—

MUNICIPALITIES, QUEENSLAND.—REVENUE AND EXPENDITURE, 1928.

Year.	Revenue.			Expenditure.			
	Rates.	Government Loans and Subsidies. (a)	Total.	Public Works and Services. (b)	Government Loan Redemption.	Office Expenses and Salaries.	Total.
CITIES AND TOWNS.							
1928 ..	£ 1,629,365	£ 168,517	£ 7,284,626(c)	£ 3,838,940	£ 86,421	£ 272,530	£ 6,429,621c
SHIRES.							
1928 ..	987,313	451,572	1,844,605	1,273,614	56,843	130,032	1,797,678

(a) Includes Main Road Receipts. (b) Includes Expenditure on Main Roads. (c) Includes Metropolitan Water Supply and Sewerage taken over by the Brisbane City Council on the 2nd April, 1928.

The figures in the foregoing tables cover all the activities of the local authorities throughout Queensland such as :—Road repairs, street lighting, etc. ; waterworks, electric light, and railways and tramways controlled by local bodies.

4. *South Australia.*—(i) *General.* A large proportion of South Australia is unincorporated, the balance being under municipal corporations in the larger cities and towns, and district councils in outside areas. These bodies are subsidized by the Government, and special grants allocated on the recommendation of the Commissioner of Highways are given for the maintenance and construction of main roads.

(ii) *Local Authorities.* (a) *Summary.* During the past five years the number of corporations and district councils has increased by 9, the total being 196, of which 11 corporations and 13 district councils are in the metropolitan area, and 28 corporations and 144 district councils in outside areas. According to the latest available information there are about 1,071 miles of roads in use for general traffic under the control of corporations, and about 45,381 miles under the control of district councils, and of these totals, 15½ miles are wood-blocked, 153½ miles are bitumen and concrete, and 13,649½ miles are tar-paved, metalled or gravelled. The following table gives the area, population, number of occupied dwellings, capital and assessment values and outstanding loans for corporations and district councils separately for the year 1928 :—

LOCAL AUTHORITIES, SOUTH AUSTRALIA.—SUMMARY, 1928.

Year.	Area.	Estimated Population.	Occupied Dwellings.	Capital Value.	Assessment Value.	Outstanding Loans.
MUNICIPAL CORPORATIONS.						
1928 ..	Acres. 65,625	No. 247,670	No. 56,352	£ 78,123,127	£ 3,980,238	£ 714,256
DISTRICT COUNCILS.						
1928 ..	33,377,823	319,307	73,488	107,114,547	5,306,816	(a) 323,922

(a) Includes advances through District Councils to settlers for vermin-proof fencing, etc., amounting to £214,726.

(b) *Revenue and Expenditure.* The next table gives the revenue and expenditure of corporations and district councils for the year 1928, showing in separate columns the receipts and expenditure on main roads. The financial year of municipal corporations ends on the 30th November and that of district councils on the 30th June.

LOCAL AUTHORITIES, SOUTH AUSTRALIA.—REVENUE AND EXPENDITURE,
1928.

Year.	Local Government (exclusive of Government Grants Account).						Government Grants Account (Main Roads).	
	Revenue.			Expenditure.			Revenue.	Expenditure.
	Rates.	Subsidies.	Total.	Roads.	Other Public Works and Services.	Total.		

MUNICIPAL CORPORATIONS.

	£	£	£	£	£	£	£	£
1928 ..	519,708	52,745	816,525	409,640	303,162	951,168	30,406	30,411

DISTRICT COUNCILS.

	£	£	£	£	£	£	£	£
1928 ..	434,321	90,326	665,130	442,188	118,432	736,340	391,564	433,948

5. Western Australia.—(i) *General.* In this State there are three forms of local authorities, namely:—(a) municipalities, (b) district road boards, and (c) local boards of health, the two former covering the whole of the State. Local boards of health are of three descriptions, (a) municipal, the members being the same as those of the municipal council of the municipality in which each is situated, (b) those under the control of road boards, and (c) those not under the control of road boards or municipalities. Several of the latter two are inactive. The financial year of municipalities and municipal boards of health terminates on the 31st October, and that of road boards and other local boards of health on the 30th June.

(ii) *Municipalities.* (a) *Summary.* The following table gives various particulars regarding municipalities for the year 1929.

MUNICIPALITIES, WESTERN AUSTRALIA.—SUMMARY, 1929.

Year ended 31st Oct.—	Municipalities.	Area.	Population.	Dwelling Houses.	Valuation of Rateable Property.		Length of Roads and Streets.
					Capital Value.	Annual Value.	
	No.	Acres.	No.	No.	£	£	Miles.
1929 ..	21	59,028	189,954	38,404	42,550,101	2,456,987	(a) 761

(a) Exclusive of cleared roads.

(b) *Revenue and Expenditure.* Revenue and expenditure of municipalities during the year 1929 are given hereunder :—

MUNICIPALITIES, WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE, 1929.

Year ended 31st October—	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other Sources.	Total.	Works and Improvements.	Interest and other Charges on Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1929 ..	363,238	6,976	1,303,606	1,673,820	408,665	274,530	797,292	1,480,487

(c) *Assets and Liabilities.* The table below shows the assets and liabilities of municipalities at the 31st October in the financial year 1929 :—

MUNICIPALITIES, WESTERN AUSTRALIA.—ASSETS AND LIABILITIES, 1929.

Year ended 31st October—	Assets.				Liabilities.	
	Balance in Hand.	Value of Property.	Accrued Sinking Funds.	Total.	Outstanding Debentures and Bonds.	Total.
	£	£	£	£	£	£
1929	125,506	2,627,163	427,712	3,676,475	2,666,040	2,901,766

(iii) *District Road Boards.* (a) *Summary.* In the next table the unimproved value is given, but in some instances the annual value is also given, and those portions of districts rated under the annual value are not included in the area rated under the unimproved capital value. The population at the date of the census of 4th April, 1921, was 160,970, and the number of dwellings 41,662.

On the 30th June, 1929, the population was estimated at 231,080, and the number of dwelling-houses at 53,162. Nine districts, however, only give figures at time of the 1921 census.

DISTRICT ROAD BOARDS, WESTERN AUSTRALIA.—SUMMARY, 1929.

Year ended 30th June—	Number of Road Districts.	Area.	Unimproved Capital Value (Approximate).	Length of Roads in Existence.	Assets.	Liabilities.	Outstanding Loans.
	No.	sq. miles.	£	miles.	£	£	£
1929 ..	128	975,828	24,573,070a	18,705b	703,173	663,807	577,486

(a) Exclusive of one Board which rates under the annual value only.

(b) Exclusive of cleared roads.

(b) *Revenue and Expenditure.* The revenue and expenditure of district road boards are shown in the following table for the year 1929 :—

DISTRICT ROAD BOARDS, WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE, 1929.

Year ended 30th June—	Revenue.				Expenditure.			
	Rates.	Government Grants.	Other.	Total.	Administration.	Works.	Other.	Total.
	£	£	£	£	£	£	£	£
1929 ..	311,908	181,970	458,060	951,938	70,051	576,482	301,454	947,987

(iv) *Local Boards of Health.* (a) *General.* On the 31st October, 1929, there were 21 local boards of health within municipalities, and on the 30th June, 1929, 88 under control of road boards, and 23 extra-municipal boards. Of the extra-municipal boards 8 were inactive during the year.

(b) *Finances.* The appended table shows the number of boards, their revenue and expenditure, and the assets and liabilities of such as were active during 1929. The financial year of municipal boards ends on the 31st October, and that of other boards on the 30th June.

LOCAL BOARDS OF HEALTH, WESTERN AUSTRALIA.—FINANCES, 1929.

Year.	Number.	Revenue.			Expenditure.		Assets.	Liabilities.
		Rates.	Sanitary Charges and Rubbish Fees.	Total.	Sanitary and Rubbish Service.	Total.		
		£	£	£		£	£	£
1929 ..	132	71,968	72,413	159,112	105,134	163,201	98,986	25,670

6. *Tasmania.*—(i) *General.* The whole State, with the exception of the cities of Hobart and Launceston, which were incorporated under separate Acts, is divided into municipal districts.

(ii) *Municipalities.* (a) *Summary.* The following table gives the number of municipalities, valuations, outstanding loans and length of roads for the year 1928–29. The latest available figure for inhabited dwellings is for the year 1921, when the number was 45,950.

MUNICIPALITIES, TASMANIA.—SUMMARY, 1928–29.

Year.	Number of Municipalities.	Valuations.			Outstanding Loans.	Length of Roads.
		Annual Value.	Unimproved Value.	Total Capital Value.		

HOBART AND LAUNCESTON.

	No.	£	£	£	£	Miles.
1928–29 ..	2	1,177,076	6,981,974	18,157,147	2,618,445	197

COUNTRY MUNICIPALITIES.

1928–29 ..	47	1,578,507	16,102,410	32,547,077	632,431	12,511

(b) *Revenue and Expenditure.* The next table gives the revenue and expenditure of all municipalities for the year 1928-29 :—

MUNICIPALITIES, TASMANIA.—REVENUE AND EXPENDITURE, 1928-29.

Year.	Revenue.			Expenditure.			
	Rates.	Government Grants.	Total.	Adminis- tration.	Works and Services.	Interest and Sinking Fund.	Total.

HOBART AND LAUNCESTON.

	£	£	£	£	£	£	£
1928-29 ..	277,458	600	601,660 _a	47,131	377,269 _a	170,692	595,719 _a

COUNTRY MUNICIPALITIES.

1928-29 ..	200,713	43,919	366,131 _a	39,714	280,148 _a	46,138	382,524 _a

(a) Excluding Loans.

7. *Basis for Municipal Rating and Limits for Rates.*—These matters were dealt with at some length in Official Year Book, No. 17, pp. 124-25, but limitations of space preclude their repetition in the present issue.

§ 4. Summary of Municipal Finance.

1. *General.*—In the preceding parts of this chapter certain particulars have been given regarding local authorities in each individual State. In this paragraph, comparative figures are given for each State regarding the financial operations of the local governing bodies referred to in § 3. The particulars in the next two tables refer to financial years as follows :—New South Wales : calendar year 1928. Victoria : 30th September, 1928, except Melbourne, 31st December, and Geelong, 31st August, 1928. Queensland : calendar year 1928. South Australia : Corporations, 30th November, and district councils, 30th June, 1928. Western Australia : Municipalities, 31st October, 1928, district road boards, 30th June, 1928. Tasmania : 30th June, 1929.

2. *Number, Revenue, Expenditure, and Valuation of Municipalities.*—The sub-joined table shows the number, revenue, and expenditure, including loan money, and valuation of local authorities in each State and in Australia during the years indicated above. It should be noted that, excepting in Queensland and Tasmania, the metropolitan water supply systems are not under municipal control ; the particulars given of revenue and expenditure for the four States other than Queensland and Tasmania do not, therefore, include revenue and expenditure on account of these systems.

MUNICIPALITIES IN EACH STATE.—FINANCIAL SUMMARY, 1928.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.(d)	Tasmania.	Total.
No. of local authorities ..	319	195	152	196	147	49	1,058

RECEIPTS.

	£	£	£	£	£	£	£
Rates—							
General ..	5,448,198	3,772,864	{ 1,978,595 638,083 }	954,029	{ 458,330 175,208 }	{ 171,928 306,243 }	15,564,930
Other ..	1,661,452						
Government grants, etc. ..	1,590,621	154,316	449,299	515,714	142,931	44,519	2,897,400
Loans and other sources ..	4,628,895	4,627,486	6,063,254	605,617	1,353,171	567,837	17,846,260
Total ..	(f)13,329,166	8,554,666	9,129,231	2,075,360	2,129,640	1,090,527	36,308,590

EXPENDITURE.

Works, services, etc. ..	{ f14,163,846	5,609,474	5,112,554	1,729,280	1,416,210	764,668	{ 86,518,151
Interest on loans and overdrafts ..		661,809	956,576	61,631	154,448		
Redemptions, sinking funds, etc. ..		291,628	426,533	71,621	135,921		
Administration ..		459,718	402,622	177,947	147,611	86,845	
Other ..		1,706,524	1,329,014	151,947	265,743	17,151	
Total ..	14,163,846	8,729,153	8,227,209	2,192,426	2,119,933	1,085,494	86,518,151

VALUATIONS.

Capital value of property ..	a 357,211,357	661,889,314	e80,006,759	185,237,674	c 64,916,776	50,704,224	1,399,966,104
Annual value of property ..	(b)	35,431,784	(b)	9,287,054	(b)	2,755,583	(b)

(a) Unimproved capital value of all rateable property. (b) Not available. (c) The valuation of road districts is the unimproved capital value. (d) Exclusive of Local Boards of Health. (e) Rateable value. (f) Portion only of loan money included.

3. Local Government Loans, 1928.—The following table shows the amount of loans raised by local authorities during the year 1928, of loans current at the end of that year, and the liability on account of interest and sinking fund, and of loans redeemed during 1928 :—

LOCAL AUTHORITIES.—LOANS, 1928.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Loans raised during year ..	5,866,001	1,477,667	2,712,091	218,549	341,229	116,945	10,732,482
Loans current at end of year	27,723,645	11,391,767	20,790,153	1,038,178	2,981,875	3,250,876	67,176,494
Annual liability on account of interest ..	1,449,612	(a)	957,253	58,009	160,576	161,439	(a)
Total sinking fund at end of year ..	2,236,486	627,251	885,764	28,334	638,944	543,495	4,960,274
Amount of loans redeemed during year ..	(a)	(a)	(a)	67,864	97,650	(a)	(a)

(a) Not available.

§ 5. Water Supply, Sewerage, and Drainage.

1. New South Wales.—(i) *General.* In Sydney and its suburbs the water supply and sewerage systems are controlled by the Metropolitan Water, Sewerage and Drainage Board, and in Newcastle and its suburbs by the Hunter District Water Supply and Sewerage Board. In country districts, both waterworks and sewerage works are constructed by the Public Works Department, and, when completed, handed over to the municipalities affected, by which the cost must be repaid.

(ii) *Metropolitan Waterworks.* (a) *General.* During the year ended 30th June, 1929, the pressure tunnel 10 miles long and 10 feet in diameter to convey water to the city was completed. Service reservoirs of 36 million gallons and 19 million gallons respectively are being constructed at Killara and Waverley-Vaucluse and amplification of pumping plant and mains is proceeding. The maximum day's consumption in the metropolitan area was 143,141,530 gallons. The mileage of mains now totals 3,998 miles.

(b) *Water Supplied, etc.* The following table gives the number of houses and estimated population supplied, and other details for the year 1929 :—

WATERWORKS, SYDNEY.—WATER SUPPLIED, 1929.

Year ended 30th June—	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Average Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population.	
	No.	No.	1,000 Gallons.	1,000 Gallons.	Gallons.	Gallons.	Miles.
1929 ..	299,401	1,497,005	84,657	30,899,799	283	56.55	145

(c) *Finances.*—The following statement shows the revenue and expenditure on account of the services of waterworks, sewerage and drainage during the year 1928–29.

WATERWORKS, SEWERAGE, AND DRAINAGE, SYDNEY, 1928–29.

Item.	Revenue.	Working Expenses, Sinking Fund Contribution, and Renewals.	Capital Indebtedness.	Percentage of Working Expenses and Sinking Fund Con- tribution on Revenue.	Percent- age of Revenue on Capital Cost.	Interest.	Surplus or Deficit.
	£	£	£	%	%	£	£
Water ..	1,657,511	a 647,357	20,647,142	39.06	8.03	879,737	+130,417
Sewerage	1,007,884	b 302,299	12,917,831	29.99	7.80	548,298	+157,287
Drainage	50,789	c 17,278	596,468	31.02	8.51	25,820	+ 7,691
Total	2,716,184	966,934	34,161,441	35.60	7.95	1,453,855	+295,395

(a) Includes payment of £40,637 to State Debt Commissioners in reduction of Capital Indebtedness, and £96,272 on Renewals.

(b) Includes payment of £27,726 to State Debt Commissioners in reduction of Capital Indebtedness, and £10,109 on Renewals.

(c) Includes payment of £1,200 to State Debt Commissioners in reduction of Capital Indebtedness, and £272 on Renewals.

(iii) *Metropolitan Sewerage and Drainage Systems.* (a) *General.* In addition to the usual progress made in connecting additional houses, 131 miles of new sewers were laid, the total length now being 1,709 miles. The quantity of sewage pumped was 5,044 million gallons.

(b) *Houses Drained, Population Served, Length of Sewers, etc.* Particulars for the year 1929 are given hereunder:—

SEWERAGE AND DRAINAGE SYSTEMS, SYDNEY.—PARTICULARS OF SERVICES, 1929.

Year ended 30th June—	Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm-water Drains.	Ventilating Shafts Erected.	Sewers Ventilated.
	No.	No.	Miles.	Miles.	Feet.	Miles.
1929	192,574	962,870	1,709.21	72.84	612,060	1,407

(iv) *Newcastle Water Supply. (a) General.* The supply is drawn from the Chichester Reservoir, and is piped about 50 miles to Newcastle. The storage reservoir capacity is 5,000 million gallons. In addition to supplying Newcastle, water is reticulated in Maitland, 20 miles distant from Newcastle, and the Cessnock coalmining field, as well as areas adjoining these centres. The supply also extends to the farming areas of Miller's Forest and the lakeside resorts of Belmont and Toronto.

Water can also be supplied from the Hunter River at Maitland, if required.

Reservoirs distributed throughout the Water Supply District number 32, with a total storage capacity of 47,217,000 gallons.

The net addition to lengths of water-mains laid was 52 miles, bringing the total length of mains to 839 miles.

(b) *Particulars of Services.* The following table supplies details for the year 1929:—

NEWCASTLE WATER SUPPLY.—SUMMARY, 1929.

Year ended 30th June—	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Quantity Supplied for the Year.	Average Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population.	
	No.	No.	1,000 gallons.	1,000 gallons.	Gallons.	Gallons.	Miles.
1929	40,222	201,000	9,230	3,387,187	230	46.16	52

(c) *Finances.* The next table gives the revenue, working expenses, capital debt, and net profit for the year 1929:—

NEWCASTLE WATER SUPPLY.—FINANCES, 1929.

Year ended 30th June—	Revenue.	Management and Working Expenses.	Capital Debt.	Percentage of Management and Working Expenses on Revenue.	Percentage of Revenue on Capital Debt.	Interest on Capital Debt.	Surplus.
	£	£	£	%	%	£	£
1929	222,905	91,874	2,716,581	41.22	8.21	134,367	—3,336

(v) *Newcastle Sewerage Works. (a) General.* The sewerage works for Newcastle and suburbs as originally designed have been completed by the Department of Public Works and vested in the Board.

The amplification, extension, and improvement of such sewerage works was authorized by "The Newcastle and Suburbs Sewerage Amplification Act 1928" passed on the 21st May, 1928. The estimated cost of the work, which is still under construction, is £761,625. Schemes for the sewerage of Stockton and West Maitland are being investigated, and Cessnock is under construction at an estimated cost of £153,000.

The stormwater drainage of Newcastle and adjoining areas is divided into two catchment areas, viz., the works in the Cottage Creek Stormwater Area, estimated to cost £200,000, and the works in the Throsby Creek Stormwater Area, estimated to cost £660,000.

(b) *Sewerage Connexions and Length of Sewers.* During the year ended 30th June, 1929, the number of properties connected with sewers was 594, making a total of 20,082. New sewers of a total length of 3 miles were constructed by the Board, bringing the total length of sewers under the Board's control to 190 miles.

(c) *Finances.* Particulars in regard to chief items for the year 1929 are given hereunder :—

NEWCASTLE SEWERAGE.—FINANCES, 1929.

Year ended 30th June—	Revenue.	Management and Working Expenses.	Capital Debt.	Percentage of Management and Working Expenses on Revenue.	Percentage of Revenue on Capital Debt.	Interest on Capital Debt.	Surplus.
	£	£	£	%	%	£	£
1929 ..	84,006	26,980	1,222,691	32.12	6.87	33,659	23,367

(vi) *Water Supply and Sewerage in Country Towns*.* (a) *General.* Under the *Local Government Act 1919*, the Public Works Department may, upon application by any municipal or shire council, construct, out of moneys voted therefor by Parliament, waterworks or sewerage works, and when completed transfer the control thereof to the council. In each case the cost, with interest, is repayable by instalments spread over a period corresponding to the probable life of the work.

(b) *Waterworks.* Up to the 30th June, 1929, waterworks in 76 towns had been completed and handed over to the respective local authorities. The capital cost of these works was £2,634,478, and the annual repayment instalments totalled £113,024. In addition to the foregoing the Broken Hill and Junee water supplies are administered by the Public Works Department under special Acts; these services entailed capital expenditures of £481,220 and £104,633 respectively.

(c) *Sewerage and Stormwater Drainage Works.* Up to the 30th June, 1929, sewerage works in thirteen towns, and stormwater drainage works in sixteen towns had been completed. Capital expenditure thereon totalled £876,789. The repayment instalments total £43,482 per annum.

2. *Victoria.*—(i) *A. The Melbourne and Metropolitan Board of Works.* (a) *General.* All land within 13 miles of the General Post Office, together with the remaining area of the City of Mordialloc and the Shire of Moorabbin and a further portion of the Shire of Dandenong, is included within the metropolitan area for water supply, sewerage, main drainage and river improvement purposes. This area covers 445 square miles of land area, and in 1929 embraced 25 cities, 1 shire, and parts of 12 other shires, or a total of 38 municipalities or portions thereof. In addition the Board supplies water to certain municipalities outside the metropolitan area.

The Board's liability on the 30th June, 1929, for loans raised was £21,625,120. The Board is still empowered to borrow £3,514,814 before reaching the limit of its borrowing powers.

(b) *Revenue and Expenditure.* The ordinary receipts and expenditure for the year 1928–29 were £1,722,488 and £1,570,578 respectively, and the loan receipts and expenditure £2,248,761 and £2,606,808 respectively.

* Excluding the area of operations of the Hunter District Water Supply and Sewerage Board.

B. Melbourne Water Supply. (a) Quantity of Water, Number of Houses, and Population Supplied. The following table gives various particulars for the year 1929. The rate levied is sixpence in the pound.

WATER SUPPLY, MELBOURNE.—PARTICULARS OF SERVICES, 1929.

Year ended 30th June—	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Consump- tion.	Total Water Consumption for the Year.	Average Daily Consumption.		Length of Mains, Reticu- lation, etc.
					Per House.	Per Head of Estimated Population.	
	No.	No.	1,000 Gallons.	1,000 Gallons.	Gallons.	Gallons.	Miles.
1929 ..	244,829	1,084,592	58,755	21,445,506	239.9	54.1	2,593

(b) Capital Cost, Revenue, Expenditure and Surplus. The total cost of construction, revenue, working expenses (exclusive of renewals and special war expenditure), interest and surplus for the year ending 30th June, 1929, together with the total amounts to that date are given below :—

WATER SUPPLY, MELBOURNE.—FINANCES, 1929.

Year ended 30th June.	Capital Cost.	Revenue.	Working Expenses. (a)	Percentage of Working Expenses on Revenue.	Interest. (b)	Surplus.
	£	£	£	%	£	£
1929 ..	937,951	797,336	140,620	17.64	475,785	180,931
Total to date ..	9,673,684	15,278,661	2,615,525	17.12	6,991,171	5,671,965

(a) Exclusive of Renewals.

(b) Includes Interest on Renewals and Sinking Funds.

C. Melbourne Sewerage. (a) Number of Houses Connected, etc. Particulars of services for the year 1929 are given below :—

SEWERAGE, MELBOURNE.—PARTICULARS OF SERVICES, 1929.

Year ended 30th June—	Number of Houses for which Sewers are Provided.	Estimated Population for which Sewers are Provided.	Average Daily Pumping.	Total Sewage Pumped for the Year.	Average Daily Pumping.		Length of Sewers, etc.
					Per House.	Per Head of Estimated Population.	
	No.	No.	1,000 Gallons.	1,000 Gallons.	Gallons.	Gallons.	Miles.
1929 ..	223,324	989,325	38,711	14,129,500	173.3	39.1	2,254

(b) *Disposal of Night-soil from Unsewered Premises.* The agreements entered into with 29 councils for the collection and delivery by them of night-soil from unsewered premises within their respective municipal districts have continued in operation during the year. The total number of pans cleaned was 1,245,371, and the night-soil was disposed of by burial by the Board at its various depots at Brooklyn, Campbellfield, and Moorabbin.

(c) *Main Drains.* Contracts amounting to £549,138 have been let to 30th June, 1929, of which works to the value of £413,000 have been actually completed. The expenditure on other works not carried out by contract amounted to £27,000. The total length of main drains under the Board's control at 30th June, 1929, was 62 miles 15 chains.

(d) *Finances.* The capital cost, revenue, working expenses (exclusive of renewals), percentage of working expenses on revenue, interest and deficiency for the year 1929 are given below:—

SEWERAGE, MELBOURNE.—FINANCES, 1929.

Year ended 30th June—	Capital Cost.	Revenue.	Working Expenses. (a)	Percentage of Working Expenses on Revenue.	Interest. (b)	Deficiency.
	£	£	£	£	£	£
1929 ..	577,311	730,166	157,449	21.56	643,990	71,273
Total to date	11,661,646	10,520,865	2,462,575	23.41	10,713,049	2,654,759

(a) Exclusive of Renewals.

(b) Includes interest on Renewals and Sinking Funds.

(e) *Metropolitan Sewage Farm.* On 30th June, 1929, the total area of the farm was 22,634 acres. The following table gives details in connexion therewith for the year 1929:—

METROPOLITAN SEWAGE FARM.—FINANCES, 1929.

Year ended 30th June—	Capital Cost.	Revenue.	Working Expenses. (a)	Interest.	Net Cost of Sewage Purification.	Trading Profit.
	£	£	£	£	£	£
1929	16,024	57,392	35,659	54,687	32,954	44,035
Total to date ..	1,023,389	748,949	442,657	795,996	455,790	461,702

(a) Exclusive of Renewals.

D. *River Improvement.* During the year ended 30th June, 1929, improvement works have been carried out on the River Yarra and Maribyrnong River, consisting chiefly of river snagging, grading and beaching of banks, widening of the waterway and dredging operations. The Board also completed an important section of the River Yarra improvements work, viz., the cut through the quarries above the Church Street Bridge.

(ii) *Geelong Waterworks and Sewerage Trust.* (a) *General.* The Geelong Waterworks and Sewerage Trust, constituted in 1908, consists of five commissioners. The amount of loan money which may be raised is limited to £725,000 for water supply undertaking, £710,000 for sewerage undertaking, and £270,000 for sewerage installation to properties under the deferred payment system. The population supplied is about 45,024.

(b) *Water Supply.* The catchment area is about 16,000 acres. The storage capacity of all the reservoirs is 2,738,119,808 gallons, and there are 257½ miles of reticulation mains within the city of Geelong and its suburbs. Arrangements have been made with the State Rivers and Water Supply Commission for a supplementary supply of a minimum quantity of 500 million gallons of water per annum from the Commission's works now being constructed to tap the watersheds of the upper reaches of the river Barwon. The total expenditure on waterworks to the 30th June, 1929, was £673,823, and the revenue for the year 1928-29 was £55,556.

(c) *Sewerage Works.* The sewerage scheme consists of a main outfall sewer to the ocean at Black Rock, about 9 miles from Geelong, and 134 miles of reticulation mains have already been laid. The drainage area is 3,489 acres, and the number of buildings within the drainage area is 11,400, and within the sewered areas 11,000, while 10,883 buildings have been connected with the sewers. Up to 30th June, 1929, the total expenditure on sewerage works was £614,425 and on the cost of sewerage installations under deferred payment conditions £248,476, of which £63,855 is outstanding. The revenue amounted to £44,177.

(iii) *The Ballarat Water Commission and the Ballarat Sewerage Authority.* (a) *General.* The Ballarat Water Commission was constituted on 1st July, 1880, and the Ballarat Sewerage Authority on the 30th November, 1920. The members of the Water Commission are the Sewerage Authority. The Commissioners number seven; three (one of whom is chairman) being appointed by the Government, and four being elected by the Council of the City of Ballarat.

(b) *Water Supply.* The Water Supply District embraces an area of about 27 square miles, containing a population of about 43,000. The total storage capacity of the six reservoirs is 2,215,558,327 gallons.

The capital cost of construction of the waterworks is £651,681. The liabilities are loans due to the Government, amounting to £304,817 as at 31st December, 1929. The annual revenue is £35,640.

(c) *Sewerage.* The scheme as designed provides for a population of 90,000 persons (present population, 40,000). The capital cost of construction to 31st December, 1929, is £273,832. The method of sewage disposal is by sedimentation, oxidation, and sludge digestion. Forty-two sewered areas have been declared as at 1st January, 1930, comprising 5,066 tenements.

The scheme is being financed by debenture issue loans from various financial institutions, £334,090 having been provided up to 31st December, 1929, for constructional works, and £100,000 for house connexions.

(iv) *Bendigo Sewerage Authority.* The members of the Bendigo City Council constitute this Authority. The sewerage district comprises the populated area of the city of Bendigo. The works when completed are estimated to cost £450,000, and comprise treatment works. Expenditure to end of December, 1929, was £281,648 for sewerage scheme and £150,354 for house connexions.

(v) *Water Supply in Country Towns and Districts.* Most of the country waterworks are controlled by the State Rivers and Water Supply Commission, but a number of other waterworks is controlled by Waterworks Trusts or by municipal corporations.

The following table gives particulars regarding waterworks under the control of trusts and municipal corporations for the year 1929:—

COUNTRY WATERWORKS, VICTORIA.—FINANCES, 1929.

Year.	Under Waterworks Trusts.				Under Municipal Corporations.			
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Current Interest Outstanding.	Number of Corporations.	Capital Cost.	Capital Indebtedness.	Current Interest Outstanding.
1929 ..	No. 104	£ 1,657,778	£ 1,305,165	£ 5,541	No. 28	£ 825,275	£ 533,335	£ 1,317

3. *Queensland.*—(i) *Water Supply and Sewerage Department, Brisbane City Council.*
(a) *General.* The whole of the water supply in the metropolitan area and the bulk supply to the City of Ipswich is filtered.

The available storage in the Brisbane River is 500 million gallons, the catchment area being approximately 4,000 square miles. In Lake Manchester the storage capacity is 7,000 million gallons, and the catchment area 28.5 square miles. The capacity of Enoggera and Gold Creek Reservoirs is 1,000 million gallons, and 431 million gallons respectively, and the catchment area 12.8 and 3.8 square miles respectively.

The total capacity of the service reservoirs on Tarragindi Hill, Bartley's Hill, Highgate Hill, Roles Hill, Wickham Terrace, and Paddington (elevated tank) is approximately 22,356,000 gallons. Early in 1929 a contract was let for the construction of a service reservoir of 5,380,000 gallons capacity on Eildon Hill.

(b) *Waterworks. Summary.* The following table gives a summary of operations for the last year :—

WATERWORKS.—SUMMARY, 1929.

Year.	Length of Reticulation Mains.	Number of Tenements Connected. (a)	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Supply per Head of Estimated Population.
	Miles.	No.	No.	1,000 Gallons	Gallons.	Gallons.
1929	792½	62,056	320,269	5,007,809	13,720,026	42.84

(a) Exclusive of Ipswich, which is a bulk supply.

The total length of the trunk mains is 193 miles.

(c) *Sewerage.* At the 31st December, 1929, 12,658 premises were connected to the Council's sewerage system, the estimate of population served being 63,290 persons. The total length of sewers in operation is 324 miles, consisting of 179 miles of sewers within premises, and 145 miles of main and reticulation sewers.

(d) *Waterworks and Sewerage Works Finances.* The subjoined table gives particulars regarding finance during the year 1929 :—

WATER AND SEWERAGE WORKS.—FINANCE, 1929.

Year.	Capital Cost.	Net Revenue from Rates.	Management and Working Expenses.	New Works Construction.	Interest and Redemption of Loans, including Sinking Fund.
	£	£	£	£	£
1929	7,784,727	678,896	181,058	236,777	535,301

(ii) *Country Towns Water Supply.* In addition to the city of Brisbane, there were at the end of the year 1928, thirty-four country towns in Queensland provided with water supply systems constructed by municipalities chiefly from Government loans. The subjoined statement gives particulars of all water supply systems, exclusive of Brisbane, for the year 1928 :—

QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1928.

Cost of Construction to 31st December, 1928—£2,051,607.

<i>Receipts.</i>			<i>Expenditure.</i>		
	£			£	
Rates and sales of water	..	216,961	Office and salaries	..	21,847
Government and other loans	..	135,753	Construction	..	149,315
Other	..	36,278	Maintenance	..	92,889
			Interest and redemption	..	89,688
			Other expenses	..	23,372
Total	..	388,992	Total	..	377,111
Assets	..	1,788,256	Liabilities	..	1,444,278

4. **South Australia.**—(i) *General.* The water supply and sewerage systems in this State are constructed and maintained by the Public Works Department.

(ii) *Adelaide Waterworks.* (a) *Summary.* The following table gives particulars for the year 1928–29, the figures for consumption being recorded by gaugings taken at the reservoirs and including evaporation and absorption. There are 50,241 meters in the Adelaide District.

ADELAIDE WATERWORKS.—SUMMARY, 1928–29.

Year ended 30th June—	Number of Assessments.	Annual Value.	Area Supplied.	Capacity of Reservoirs.	Length of Mains.	Annual Consumption.
	No.	£	Acres.	Million Gallons.	Miles.	1,000 Gallons.
1929	131,750	5,423,426	115,535	7,753	1,255	7,926,900

(b) *Finances.* Particulars for the year 1928–29 are given below:—

ADELAIDE WATERWORKS.—FINANCES, 1928–29.

Year ended 30th June—	Capital Cost.	Revenue.		Expenses.			Percentage of Net Revenue on Capital Cost.
		Rates.	Total.	Engineering Branch.	Revenue Branch.	Total.	
	£	£	£	£	£	£	%
1929 ..	3,488,102	393,866	478,428	71,510	11,878	83,388	11.32

(iii) *Adelaide Sewerage.* Particulars for the year 1928–29 are given hereunder:—

ADELAIDE SEWERAGE.—SUMMARY, 1928–29.

Year ended 30th June—	Length of Sewers.	Number of Connexions.	Capital Cost of Revenue-Producing Works.	Revenue.		Working Expenses.		Percentage of Net Revenue on Capital Cost.
				Rates, etc.	Total.	Maintenance, etc.	Total.	
	Miles.	No.	£	£	£	£	£	%
1929 ..	519	54,439	1,529,183	190,263	198,919	25,881	31,121	10.97

(iv) *Country Towns Water Supply.* (a) *Summary.* The chief items of information regarding these undertakings are set forth in the table below for the year 1928–29.

COUNTRY TOWNS WATERWORKS, SOUTH AUSTRALIA.—SUMMARY, 1928–29.

Year ended 30th June—	Number of Assessments.	Area Supplied.	Capacity of Reservoirs.	Length of Mains.	Annual Consumption.
	No.	Acres.	Million Gallons.	Miles.	1,000 Gallons.
1929	48,092	11,824,843	9,096	4,522	1,413,845

(b) *Finances.* The next table gives financial information for the year 1928–29:—

COUNTRY TOWNS WATERWORKS, SOUTH AUSTRALIA.—FINANCES, 1928–29.

Year ended 30th June—	Capital Cost.	Revenue.		Working Expenses.			Percentage of Net Revenue on Capital Cost.
		Rates.	Total.	Engineer- ing Branch.	Revenue Branch.	Total.	
	£	£	£	£	£	£	%
1929 ..	8,953,620	173,609	221,685	81,299	7,884	89,183	1.48

(v) *Other Sewerage Systems.* Information in summarized form is given below regarding the two suburban sewerage systems, viz., the Glenelg system and the Port Adelaide and Semaphore system, for the year 1928–29:—

**SUBURBAN SEWERAGE SYSTEMS, SOUTH AUSTRALIA.—SUMMARY,
1928–29.**

Year ended 30th June—	Length of Sewers.	Number of Con- nexions.	Capital Cost.	Revenue.		Working Expenses.		Percentage of Net Revenue on Capital Cost.
				Rates.	Total.	Mainten- ance.	Total.	
	Miles.	No.	£	£	£	£	£	%
1929 ..	92	9,585	636,735	36,551	37,270	9,407	10,360	4.23

5. *Western Australia.*—(i) *General.* The water supply and sewerage systems of Western Australia are all under the management of Government Departments, and are divided into the following categories:—(a) Metropolitan Water Supply, Sewerage and Drainage, covering Perth, Fremantle, Claremont, Guildford, Midland Junction, and Armadale District, (b) Goldfields Water Supply, (c) Water Supply of other towns, (d) Agricultural Water Supply, (e) other Mines Water Supply, and (f) artesian and sub-artesian waters.

(ii) *Metropolitan Water Supply, Sewerage and Drainage.* (a) *General.* The sources of the metropolitan water supply are the Victoria Reservoir, Bickley Brook, Mundaring Reservoir, thirteen bores, and the Armadale, Churchman Brook, Canning River, and Wungong pipe head dams. The sewerage system consists of septic tanks and percolating filters for Perth, and septic tanks and ocean outfall for Fremantle and Subiaco. At the 30th June 1929, the number of premises connected with sewers was 20,762.

(b) *Summary.* The following table gives particulars regarding water supply for the year 1929:—

WATER SUPPLY, WESTERN AUSTRALIA.—SUMMARY, 1929.

Year ended 30th June—	Estimated Population Supplied.	Number of Houses Supplied.	Water Supplied.	Average Daily Supply.		Number of Meters.	Length of Mains.
				Per Head.	Per House.		
	No.	No.	1,000 Gallons.	Gallons.	Gallons.	No.	Miles.
1929 ..	207,000	48,865	3,174,499	41.82	177.15	35,562	824

(c) *Finances.* The table hereunder gives separate information for the water supply and sewerage and drainage branches for the year 1929 :—

WATER SUPPLY AND SEWERAGE AND DRAINAGE, WESTERN AUSTRALIA.—FINANCES, 1929.

Year ended 30th June—	Water Supply.			Sewerage and Drainage.		
	Capital Cost.	Revenue.	Expenditure.	Capital Cost.	Revenue.	Expenditure.
1929 ..	£ 3,093,843	£ 254,945	£ 242,268	£ 1,519,128	£ 111,876	£ 101,269

(iii) *Goldfields Water Supply.* The source of supply for the Coolgardie and adjacent goldfields, as well as for towns and districts on or near the pipe-line, is the Mundaring Reservoir, which has a capacity of 4,650 million gallons. There are three classes of consumers—the railways, the mines, and “other,” and in 1928–29 the railways consumed 9 per cent., the mines 20 per cent., and “other” 71 per cent. of the supply. The following table gives details for the year 1929 :—

GOLDFIELDS WATER SUPPLY, WESTERN AUSTRALIA.—SUMMARY, 1929.

Year ended 30th June—	Total Consumption.	Number of Services.	Length of Water Mains.	Capital Cost.	Revenue.	Expenditure.
1929 ..	1,000 gallons. 1,090,000	No. 10,554	Miles. 1,519	£ 3,701,543	£ 174,728	£ 187,453

(iv) *Water Supply of Other Towns.* During the year 1928–29 there were 26 towns provided with water supplies, of which 12 are controlled by Water Boards and 14 by the Public Works Department. The total supplies to the latter towns for the year ending 30th June, 1929, were as follows :—Domestic, 145,000,000 gallons, and Railways, 24,000,000 gallons. The estimated population was 18,500, and the average daily domestic consumption was 21 gallons per head.

(v) *Agricultural Water Supply.* During the year 1928–29, 18 tanks were excavated and 25 wells sunk, 23 of which yielded fresh water. During the 19 years from the 1st July, 1910, to the 30th June, 1929, 486 tanks were built, 355 wells sunk, and 3,419 bores put down to a total depth of 150,709 feet. Of the bores mentioned, 512 yielded fresh and 284 stock water.

(vi) *Artesian and Sub-artesian Waters.* Up to the 30th June, 1929, the total number of bores put down in search of artesian or sub-artesian water was 242, including 49 sunk in the metropolitan area, ranging in depth from 30 to 4,006 feet.

6. Tasmania.—(i) *Hobart Water Supply.* The cost of this undertaking to the 30th June, 1929, was £436,233, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at 30th June, 1929, amounted to £356,193. At the same date the number of tenements supplied in the city and suburbs was 10,488 and the length of reticulation mains 126½ miles. The revenue for the year 1929 was £40,897.

(ii) *Hobart Sewerage System.* The revenue for the year ended 30th June, 1929, was £39,860. Up to that date 80½ miles of sewers had been laid in connexion with the original city system at a cost of £214,094, and 8,366 tenements connected. Since the original city was sewered, the Municipalities of Queenborough and New Town have been included

in the city, and are now being sewered. In Queenborough 25½ miles of sewers, connecting with 1,417 tenements, have been constructed at a cost of £119,626. In New Town a total of 36¼ miles of sewers have been laid, and 1,375 properties connected. The cost to 30th June, 1929, including surveys and sewerage outfall, was £110,994.

§ 6. Harbour Boards and Trusts.

1. *New South Wales.*—(i) *Sydney Harbour Trust.* (a) *General.* The Sydney Harbour Trust, which consists of three Commissioners appointed by the Government, controls the whole of the wharves resumed by the Government in 1901. The Commissioners also provide and maintain the lighting and marking of the harbour, and carry out all necessary dredging. The whole of what might be termed city wharves is owned by the Commissioners and leased to various shipping companies, but the Trust directly operates and maintains a certain number of open wharves. Outside the city area the wharves are, to a large extent, privately controlled, but all structures beyond high-water mark are held under leases issued by the Trust. The extent of wharfage accommodation now available for use totals 77,030 lineal feet, inclusive of 9,267 lineal feet privately owned, 4,693 lineal feet of cross wharf and 3,427 lineal feet of ferry wharves.

The depth of water at the entrance to the port is not less than 80 feet and in the channels there are 40 feet at low-water spring tides. The foreshores of Sydney Harbour are about 200 miles in length. The area of the water in the port is 14,284 acres, of which 3,000 acres have a depth ranging from 35 to 160 feet.

Since its inception, the Trust has spent £7,504,243 on the reconstruction and extension of the wharfage and improvements to the port and vested area. Over 14,381 lineal feet of old and obsolete wharfage have been demolished, and 35,962 lineal feet of new berths have been constructed. Other improvements include 2,972,400 square feet of floor area of new sheds and nearly 4 miles of new roadways.

During the year 1929, 1,856,121 tons of material were dredged at a cost of £98,174. In the process of towing such material, 41,998 miles were run at a cost of £38,200.

(b) *Finances.* The subjoined table gives particulars concerning the finances of the Trust for the year 1929:—

SYDNEY HARBOUR TRUST.—FINANCES, 1929.

Year ended 30th June.	Revenue.				Expenditure.	Total Capital Debt.	Interest.	Balance.
	Wharfage and Harbour Rates.	Tonnage Rates and Berthing Charges.	Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1929 ..	671,565	52,912	379,120	1,103,597	369,037	11,924,357	614,067 ^a	120,493

(a) Includes £30,067 sinking fund contributions.

2. *Victoria.*—(i) *Melbourne Harbour Trust.* (a) *General.* Information regarding the origin and constitution of this Trust will be found in Official Year Book No. 12, pp. 970 *et seq.* In 1929, the length of sheds in the port was 18,187 feet, covering an area of 1,193,766 square feet. The quantity of material raised by the dredging and excavation done in the improvement of the river and bay amounts to 92,374,519 cubic yards. The Trust has expended £339,633 in reclaiming land within its jurisdiction.

(b) *Finances.* During the year ended 31st December, 1929, the revenue of the Trust amounted to £786,348, and the ordinary expenditure to £522,292, leaving, after provision for depreciation and renewals account and sinking fund, a net surplus on revenue account of £51,056. The capital expenditure for the year was £455,052. Up to 31st December, 1929, the total capital expenditure amounted to £7,858,530.

(ii) *Geelong Harbour Trust.* (a) *General.* The Geelong Harbour Trust was constituted in 1905, and is under the control of three Commissioners appointed by the Governor in Council.

(b) *Finances.* The following table gives financial details for the year 1929:—

GEELONG HARBOUR TRUST.—FINANCES, 1929.

Year.	Loans.	Sinking Fund.	Revenue.	Expenditure.
	£	£	£	£
1929	634,187	(a)	66,315	64,074

(a) Not available.

(iii) *Harbour Boards.* The Harbour Boards Act of 1927 provides for the constitution of Harbour Boards for the following ports:—Gippsland Lakes; Welshpool; Warrnambool; Port Fairy; Portland. These ports have, hitherto, been under the control of the Department of Ports and Harbours of Victoria. The first board to be constituted under this Act is the Warrnambool Harbour Board. (See *Victoria Gazette*, 6th June, 1928, page 1595.)

3. *Queensland.*—(i) *Bowen Harbour Board.* (a) *General.* The Bowen Harbour Board consists of seven members, of whom two are appointed by the Governor in Council and the remainder elected by the electors of the Town of Bowen and adjacent shires. The district under its jurisdiction comprises the area within the boundaries of the Town of Bowen, the Shires of Prosperine and Wangaratta, and division I. of the Shire of Ayr.

(b) *Finances.* The capital expenditure for the year 1929 was £19,778, while for the same period the receipts were £20,178 and the expenditure £19,778.

(ii) *Bundaberg Harbour Board.* (a) *General.* The Bundaberg Harbour Board consists of nine members, of whom one is appointed by the Governor in Council, four elected by the ratepayers of the City of Bundaberg, and two each by the ratepayers of the Shires of Gooburrum and Woongarra.

(b) *Finances.* Receipts for the year 1929 amounted to £5,843 as compared with £6,787 in 1928, while expenditure for corresponding periods totalled £7,566 and £9,410 respectively.

(iii) *Cairns Harbour Board.* (a) *General.* The Cairns Harbour Board consists of twelve members, representing the city of Cairns and eight adjoining shires. The wharves at Cairns, which are all under the control of this Board, are of reinforced ferro-concrete, and 1,900 feet in length, and form an unbroken quay line of 1,500 feet partly connected with railway communication along front of same where considered advisable for handling direct ex trucks. The total tonnage of outward cargo from the port for 1929 was 242,757 tons.

(b) *Finances.* During the year 1929, the gross revenue of the Board was £63,611, derived from harbour, berthage, and miscellaneous dues, etc.

(iv) *Gladstone Harbour Board.* (a) *General.* The Gladstone Harbour Board is composed of seven members, two of whom are appointed by the Governor in Council and five elected by the electors of the town of Gladstone and the shires of Calliope and Miriam Vale.

(b) *Finances.* The total capital expenditure to the end of 1929 amounted to £91,489. The revenue for 1929 was £8,438, and the expenditure £8,502.

(v) *Mackay Harbour Board.* (a) *General.* The Mackay Harbour Board consists of nine members elected by the electors of the city of Mackay and the shires of Pioneer, Sarina, Mirani and Nebo.

(b) *Finances.* Capital expenditure for the year 1929 was £10,704; receipts totalled £16,727; total expenditure amounted to £17,051.

(vi) *Rockhampton Harbour Board.* (a) *General.* The Rockhampton Harbour Board consists of eleven members, of whom seven are elected by the electors on the rolls for the city of Rockhampton, the town of Mount Morgan and the shires of Fitzroy and Livingstone. The remaining four are elected by the councillors of groups of inland shires.

(b) *Finances.* The revenue for the year 1929 was £30,169; and the expenditure was £23,641, which included £701 interest on loans and overdraft.

(vii) *Townsville Harbour Board.* (a) *General.* The Townsville Harbour Board is composed of nine members, of whom two are appointed by the Governor in Council, and the remaining seven are elected by the electors of Townsville and adjacent towns and shires. All harbour works and conveniences for the use of shipping are under the control of the Board.

(b) *Finances.* The total expenditure since the inception of the Board is £1,914,465, while the receipts for the year 1929 were £89,157 and the expenditure £89,795.

4. *Western Australia.*—(i) *Fremantle Harbour Trust.* (a) *General.* Fremantle Harbour is controlled by a Board of five Commissioners appointed by the Governor in Council. A description of the works was given in a previous Year Book (see No. 12, p. 973). Since that account was written, the inner harbour and entrance channel have been dredged to a depth of 36 feet below the lowest known low water. The berthage accommodation at all the quays has also been deepened to 36 feet.

(b) *Finances.* The following table gives financial data for the year 1929 :—

FREMANTLE HARBOUR TRUST.—FINANCES, 1929.

Year ended 30th June—	Revenue.	Expenditure.	Gross Amount Paid to the Treasury.				
			Interest.	Sinking Fund.	Renewals Fund.	Surplus Revenue.	Total.
	£	£	£	£	£	£	£
1929	589,359	591,590	104,531	24,442	2,000	161,408	292,331

(ii) *Bunbury Harbour Board.* (a) *General.* The Bunbury Harbour Board consists of five members, appointed by the Government. The jetty is 4,900 feet long, with berthage accommodation of 2,700 feet on the west side and 3,000 feet on the east side, and is electrically lighted.

(b) *Finances.* Details for the last year are given hereunder. Surplus revenue is paid into Consolidated Revenue Fund to meet interest and sinking fund :—

BUNBURY HARBOUR BOARD.—1929.

Year ended 30th June—	Capital Expenditure.	Revenue.	Expenditure.	Paid to Consolidated Revenue Fund.
	£	£	£	£
1929	453,736	25,917	18,562	11,050

5. *Tasmania.*—(i) *Marine Board of Hobart.* (a) *General.* The Marine Board of Hobart consists of nine wardens elected by the ship-owners of the Port of Hobart and the importers and exporters of goods into or from any port within the jurisdiction of the Board.

(b) *Finances.* The following table gives details for the year 1929:—

MARINE BOARD OF HOBART.—FINANCES, 1929.

Year ended 30th June—	Capital Debt.	Revenue.			Expenditure.			
		Harbour Improvements, Debentures, etc.	General.	Total.	Harbour Improvements.	Interest and Sinking Fund.	General.	Total.
1929 ..	£ 27,285	£ ..	£ 38,988	£ 38,988	£ 445	£ 4,389	£ 25,471	£ a 43,305

(a) Including £13,000 from revenue in reduction of loans.

(ii) *Marine Board of Launceston.* (a) *General.* The Marine Board of Launceston consists of five wardens, three elected by the ratepayers of the city of Launceston and two by ratepayers of the municipalities within the Tamar District.

(b) *Finances.* The following table gives details for the year 1929:—

MARINE BOARD OF LAUNCESTON.—FINANCES, 1929.

Year.	Total Capital Debt.	Revenue.	Expenditure.
1929 ..	£ 373,223	£ 62,208	£ 63,013

(iii) *Marine Board of Burnie.* The length of the breakwater is 1,250 feet, with a depth up to 42 feet at low water, and a wharf alongside, 630 feet in length by 91 feet wide, with a depth at low water from 24 to 40 feet. There are two other timber wharves 600 feet and 400 feet long respectively. The receipts for the year ending 30th June, 1929, were £21,575, and the expenditure £21,331, including £14,300 interest on loans.

§ 7. Fire Brigades.

1. *New South Wales.*—(i) *General.* Under the Fire Brigades Act of 1909–27, a Board of Fire Commissioners consisting of eight members operates, and fire districts have been constituted. The cost of maintenance of fire brigades is borne in proportions of quarter, quarter, and half by the Government, the municipalities, and the insurance companies concerned, but the expenditure must be so regulated that the proportion payable by the councils in a fire district shall not exceed the amount obtainable from $\frac{1}{2}$ d. in the £ rate on the unimproved capital value of rateable land in the fire district: provided that the Board, with the consent of the Minister, and at the special request of the councils of the municipalities or shires constituting or forming part of a fire district or a majority in number of such councils may, as to that district, exceed the limit above provided.

(ii) *Sydney Fire District.* The Sydney fire district includes the City of Sydney and suburbs, comprising a total area of 252 square miles. On the 31st December, 1929, the Board had under its control in this district 76 stations. The receipts for the year 1929 were £330,386, made up as follows:—From the Government, £80,777; municipalities, £80,777; fire insurance companies, £160,964; firms, £590; and from other sources, £7,278. The disbursements for the year were £322,364.

2. *Victoria.*—(i) *General.* The Fire Brigades Act of 1915 provides for a Metropolitan Fire Brigades Board, and a Country Fire Brigades Board, each consisting of nine members, with local committees in country districts. The income of each board is derived in equal proportions from the Treasury, the municipalities, and insurance companies.

(ii) *Metropolitan Fire Brigade Board.* On the 30th June, 1929, the Board had under its control 41 stations. The total receipts for the year 1928-29 were £240,082, comprising contributions £182,581, receipts for services £27,043, and interest and sundries £30,458. The expenditure was £238,818, made up as follows :—Salaries £117,714, interest and repayments of principal £20,173, and other expenditure £101,931.

(iii) *Country Fire Brigades Board.* At 30th June, 1929, there were 119 municipal councils and 108 insurance companies included in the operations of the Act. The brigades are composed chiefly of volunteers, but in the large centres a few permanent station-keepers and partially-paid firemen are employed. Complete fire alarm systems are installed in 27 of the larger provincial cities and townships. There were 149 registered brigades at 30th June, 1929. For the year 1928-29 the revenue was £34,210 and the expenditure £32,210.

3. *Queensland.*—(i) *General.* The Act of 1920 made provision for the retention of existing fire districts, and for the constitution of new districts. For each district there must be a Fire Brigades Board consisting of seven members, and the cost of maintenance of each brigade is proportioned as follows :—The Treasurer two-sevenths, insurance companies three-sevenths, and local authorities two-sevenths. All volunteer fire brigades in a district must be registered.

(ii) *Fire Brigades Boards.* At the end of the year 1929 there were fire brigades in 28 towns. The total revenue for the year 1928 was £89,852, received mainly from the following sources :—Government £23,050, local authorities £23,015, and insurance companies £34,394. The total expenditure for the year was £86,523, the chief items being salaries and wages £52,054, buildings, repairs, etc., £10,461, and plant, stores, etc., £9,852.

4. *South Australia.*—(i) *General.* The Fire Brigades Act of 1913 and amendments provide for a Board of five members, and the expenses and maintenance of brigades are defrayed as to two-ninths by the Treasury, five-ninths by insurance companies, and two-ninths by the municipalities concerned.

(ii) *Fire Brigades Board.* At the end of 1929 there were altogether 27 fire brigade stations. The total revenue for the year 1929 was £51,914.

5. *Western Australia.*—(i) *General.* Under the 1916 Act every municipal or road board district is constituted a fire district under the control of the Western Australian Fire Brigades Board. The income of the Board is derived as to two-eighths from Government, three-eighths from municipalities, and three-eighths from insurance companies.

(ii) *Western Australian Fire Brigades Board.* The whole of the brigades throughout the State are now controlled by the Western Australian Fire Brigades Board, and number 39. The revenue and expenditure for the year ended 30th September, 1929, were £57,907 and £57,499 respectively. The estimated value of land and buildings was £68,600 and of plant £37,800.

6. *Tasmania.*—(i) *General.* The municipal council of any municipality may, under the Act of 1920, petition the Governor to proclaim the municipality or any portion of it to be a fire district, each district to have a Board of five members. The expenses of each Board are borne in equal proportions by contributions from the Treasurer, the municipality concerned, and insurance companies insuring property within the district.

(ii) *Hobart Fire Brigade Board.* The revenue of the Board for the year 1929 amounted to £6,633.

CHAPTER V. LAND TENURE AND SETTLEMENT.

§ 1. Introduction.

1. **General.**—A comprehensive description of the land tenure systems of the several States was given in Official Year Book No. 4 (pp. 235 to 333), while later alterations were referred to in subsequent issues. In this chapter a summary is given of the principal features of existing land legislation. In previous issues an account of the various tenures under which Crown lands may be taken up was given, but considerations of space prevent its repetition herein. (See Year Book No. 22, p.p. 133–195). Special paragraphs are devoted to the settlement of returned soldiers on the land, the tenure of land by aliens, and advances to settlers. Particulars as to the areas of land alienated in each State and similar matter are also included.

2. **State Land Legislation.**—The legislation in force relating to Crown lands, Closer Settlement, Returned Soldiers' Settlement, and other matters dealt with in this chapter is summarized in the following conspectus:—

STATE LAND LEGISLATION.

New South Wales.	Victoria.	Queensland.
CROWN LANDS ACTS.		
Crown Lands Act 1913–1927: Western Lands Act 1901–1927: Crown Lands Purchase Validation Act 1923. Crown Lands Amendment (Disposal) Act 1923. Crown Lands and Closer Settlement (Amending) Act 1924.	Land Act 1915–1928.	Land Acts 1910–1929. Upper Burnett and Callide Land Settlement Act 1923. Prickly-pear Land Acts 1923–1926. Sugar Workers' Perpetual Lease Selections Act 1923.

CLOSER SETTLEMENT ACTS.

Closer Settlement Act 1904–1919: Closer Settlement Purchases Validation Act 1923. Closer Settlement and Returned Soldiers' Settlement (Amendment) Act 1927.	Closer Settlement Act 1915–1928.	Closer Settlement Act 1906–1929.
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MINING ACTS.

Mining Act 1906–1924: Mining Leases (Validation) Act 1924.	Mines Act 1915–1921.	Mining Acts 1898–1929: Mining for Coal and Mineral Oil Act 1912: Petroleum Acts 1923–1929: Miners' Homestead Leases Act 1913–1929: Coal Mining Act 1925–1928.
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SOLDIERS' SETTLEMENT ACTS.

Returned Soldiers' Settlement Act 1916–1928.	Discharged Soldiers' Settlement Act 1917–1928.	Discharged Soldiers' Settlement Act 1917–1929.
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ADVANCES TO SETTLERS ACTS.

Government Savings Bank Act 1906–1923: Returned Soldiers' Settlement Act 1916–1925.	State Savings Bank Act 1915–1922: Primary Products Advances Act 1919–1922: Closer Settlement Act 1915–1928: Fruit Act 1915–1920: Discharged Soldiers' Settlement Act 1917–1928.	State Advances Act 1916: Co-operative Agricultural Products and Advances to Farmers Act 1914–1919: Agricultural Bank Act 1923–1929.
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3. North Australia and Central Australia Land Legislation.—In the Territories of North Australia and Central Australia, the legislation relating to Crown lands is embodied in the Crown Lands Ordinance 1927–1929, that relating to mining in the Northern Territory Mining Act 1903, the Gold Dredging Act 1899, the Tin Dredging Ordinance 1911–1920, the Mineral Oil and Coal Ordinance 1922–1923, and the Encouragement of Mining Ordinance 1913–1926; and that relating to Advances to Settlers in the Wire and Wire Netting Act 1927, and the Encouragement of Primary Production Ordinance 1927–1928.

4. Federal Capital Territory Land Legislation.—In the Federal Capital Territory the Ordinances relating to Crown lands are the Leases Ordinance 1918–1927, the Public Parks Ordinance 1928, the City Area Leases Ordinance 1924–1929, the Church Lands Leases Ordinance 1924–1927, and the Leases (Special Purposes) Ordinance 1925–1929.

STATE LAND LEGISLATION—*continued.*

South Australia.	Western Australia.	Tasmania.
CROWN LANDS ACTS.		
Crown Lands Act 1929: Pastoral Act 1904–1929.	Land Act 1898–1928.	Crown Lands Act 1911–1924.
CLOSER SETTLEMENT ACTS.		
Crown Lands Act 1929.	Agricultural Lands Purchase Act 1909–1922: Closer Settlement Act 1927.	Closer Settlement Act 1913–1924.
MINING ACTS.		
Mining Act 1898–1928: Gold Dredging Act 1905: Mining on Private Property Act 1909–1916.	Mining Act 1904–1923: Sluicing and Dredging for Gold Act 1899.	Mining Act 1917–1924: Aid to Mining Act 1924.
RETURNED SOLDIERS' SETTLEMENT ACTS.		
Discharged Soldiers' Settlement Act 1917–1925.	Discharged Soldiers' Settlement Act 1918–1919.	Returned Soldiers' Settlement Act 1916–1923.
AGRICULTURAL GRADUATES SETTLEMENT ACTS.		
Agricultural Graduates Act 1922.		
ADVANCES TO SETTLERS ACTS.		
Irrigation Act 1922–1928: Discharged Soldiers' Settlement Act 1917–1925: State Bank Act 1925–1928: Advances to Settlers on Crown Lands Act 1914–1927: Agricultural Graduates Act 1922.	Agricultural Bank Act 1906–1929.	State Advances Act 1907–1927: Advances to Fruit-growers Act 1918–1921: Closer Settlement Act 1913–1924: Returned Soldiers' Settlement Act 1916–1923.

5. **Administration and Classification of Crown Lands.**—In each of the States there is a Lands Department under the direction of a responsible Cabinet Minister who is charged generally with the administration of the Acts relating to the alienation, occupation and management of Crown lands. The administrative functions of most of the Lands Departments are to some extent decentralized by the division of the States into what are usually termed Land Districts, in each of which there is a Lands Office, under the management of a lands officer, who deals with applications for selections and other matters generally appertaining to the administration of the Acts within the particular district. In some of the States there is also a local Land Board or a Commissioner for each district or group of districts. In the Northern Territory the North Australia Commission is charged with the general administration of the Lands Ordinance and of Crown lands in the Northern Territory. In the Federal Capital Territory the administration of the Leases Ordinances is in the hands of the Department of Home Affairs.

Crown lands are generally classified according to their situation, the suitability of the soil for particular purposes, and the prevailing climatic and other conditions. The modes of tenure under the Acts, therefore, as well as the amount of purchase money or rent, and the conditions as to improvements and residence, vary considerably. The administration of special Acts relating to Crown lands is in some cases in the hands of a Board under the general supervision of the Minister, e.g., the Western Lands Board in New South Wales.

In each of the States and in the Northern Territory there is also a Mines Department which is empowered under the several Acts relating to mining to grant leases and licences of Crown Lands for mining and auxiliary purposes.

6. **Classification of Tenures.**—The tabular statement which follows shows the several tenures under which Crown lands may be acquired or occupied in each State. In the Northern Territory perpetual leases of pastoral and agricultural land are granted, as well as miscellaneous leases, and grazing and occupation licences. The mining leases and holdings are, generally speaking, similar to those of the States. In the Federal Capital Territory only city leases and leases of other lands are issued.

STATE CROWN LANDS—TENURES.

New South Wales.

Victoria.

Queensland.

FREE GRANTS, RESERVATIONS AND DEDICATIONS.

Free Grants: Reservations: and
Dedications.

Free Grants: Reservations.

Free Grants: Reservations.

UNCONDITIONAL PURCHASES OF FREEHOLD.

Auction Sales: After-auction
Purchases: Special Purchases:
Improvement Purchases.

Auction Sales.

Sales (at or after auction):
Unconditional Selections.

CONDITIONAL PURCHASES OF FREEHOLD.

Residential Conditional Pur-
chases: Non-residential Con-
ditional Purchases: Additional
Conditional Purchases: Con-
versions of various Lease-
hold Tenures into Conditional
Purchases: Purchases of Town
Leases: Suburban Holdings:
Returned Soldiers' Special
Holdings: Residential Leases:
Week-end Leases.Residential Selection Purchase
Leases: Non-residential Selec-
tion Purchase Leases: Licences
of Auriferous worked-out Lands:
Conditional Purchase Leases of
Swamp or Reclaimed Lands:
Selection Purchase Leases of
Mallee Lands: Murray River
Settlements: Special Settlement
Areas: Conversions into Selec-
tion Purchase Leases.Agricultural Farms: Agricul-
tural Homesteads: Free
Homesteads: Prickly-pear
Selections.

STATE CROWN LANDS—TENURES—*continued.*

New South Wales.	Victoria.	Queensland.
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LEASES AND LICENCES UNDER LAND ACTS.

Conditional Leases: Conditional Purchase Leases: Special Conditional Purchase Leases: Homestead Selections: Homestead Farms: Settlement Leases: Special Leases: Annual Leases: Scrub Leases: Snow Leases: Inferior Lands Leases: Crown Leases: Improvement Leases and Leases under Improvement Conditions: Occupation Licences: Leases of Town Lands: Suburban Holdings: Weekend Leases: Residential Leases: Leases in Irrigation Areas: Western Lands Leases: Forest Leases: Forest Permits.	Perpetual Leases: Auriferous Lands Licences: Leases of Swamp or Reclaimed Lands: Perpetual Leases of Swamp or Reclaimed Lands: Grazing Licences: Perpetual Leases (Mallee): Miscellaneous Leases and Licences: Bee Farm Licences: Bee Range Area Licences: Eucalyptus Oil Licences: Forest Leases: Forest Licences: Forest Townships.	Perpetual Lease Selections: Perpetual Lease Prickly-pear Selections: Pastoral Leases: Preferential Pastoral Leases: Stud Holdings: Prickly-pear Leases: Occupation Licences: Special Leases: Grazing Selections: Development Grazing Selections: Auction Perpetual Leases: Pastoral Development Leases.
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CLOSER SETTLEMENT.

Sales by Auction and Tender: After-auction Sales and Tenders: Settlement Purchases.	Sales of Land: Conditional Purchase Leases: Conditional Purchase Leases in Mountainous Areas.	Agricultural Farms: Unconditional Selections: Perpetual Lease Selections: Settlement Farm Leases: Perpetual Town, Suburban and Country Leases.
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LEASES AND LICENCES UNDER MINING ACTS.

Holdings under Miners' Rights: Gold Mining Leases: Mineral Leases: Coal and Oil Mining Leases: Business Licences: Residence Areas.	Holdings under Miners' Rights: Gold Mining Leases: Mineral Leases: Business Areas: Residence Areas.	Holdings under Miners' Rights: Permits to Prospect for Petroleum: Petroleum Leases: Licences to Prospect for Coal and Mineral Oil: Gold Mining Leases: Mineral Leases: Business Areas: Residence Areas: Miners' Homestead Perpetual Leases.
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SETTLEMENT OF DISCHARGED SOLDIERS AND SAILORS.

Soldiers' Group Purchases: Returned Soldiers' Special Holding Leases: Returned Soldiers' Special Holding Purchases: also Purchases and Leases under Crown Lands Act of lands set apart for application by discharged soldiers exclusively.	(Same Tenures as under the Land and Closer Settlement Acts.)	Agricultural Farms: Perpetual Lease Selections: Perpetual Town and Suburban Leases.
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STATE CROWN LANDS—TENURES—*continued.*

South Australia.	Western Australia.	Tasmania.
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FREE GRANTS, RESERVATIONS, AND DEDICATIONS.

Free Grants: Reservations.	Free Grants: Reservations.	Free Grants: Reservations.
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UNCONDITIONAL PURCHASES OF FREEHOLD.

Auction Sales.	Auction Sales.	Auction Sales: After-auction Sales: Sales of Land in Mining Towns.
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CONDITIONAL PURCHASES OF FREEHOLD.

Agreements to Purchase: Special Agreements to Purchase (40 years' term): Homestead Blocks.	Conditional Purchases with Residence: Conditional Purchases without Residence: Conditional Purchases by Direct Payment: Conditional Purchases of Land for Vineyards, etc.: Conditional Purchases of Inferior Lands: Conditional Purchases by Pastoral Lessees: Conditional Purchases of Grazing Lands: Homestead Farms: Village Allotments: Workingmen's Blocks: Special Settlement Leases.	Selections for Purchase: Additional Selections for Purchase: Homestead Areas: Selections in Mining Areas: Sales by Auction: Sales by Private Contract: After-auction Sales: Special Settlement Areas.
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LEASES AND LICENCES UNDER LAND ACTS.

Perpetual Leases: Special Perpetual Leases (Free Period): Perpetual Leases of Homestead Blocks: Miscellaneous Leases: Grazing and Cultivation Leases: Licences: Licences of Resumed Land: Pastoral Leases: Leases of Unoccupied Pastoral Land: Irrigation Blocks: Town Allotments in Irrigation Areas: Forest Leases.	Pastoral Leases: Special Leases: Residential Leases: Leases of Town and Suburban Lands: Irrigation Leases.	Grazing Leases: Pastoral Leases: Leases of Land covered with Button Grass, etc.: Leases of Mountainous Land: Miscellaneous Leases: Temporary Licences: Occupation Licences: Residence Licences: Business Licences: Forest Leases, Licences and Permits.
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CLOSER SETTLEMENT.

Sales by Auction: Agreements to Purchase: Miscellaneous Leases.	Conditional Purchases: Town and Suburban Areas.	Leases with Right of Purchase: Special Sales.
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LEASES AND LICENCES UNDER MINING ACTS.

Holdings under Miners' Rights: Search Licences: Occupation Licences: Gold Leases: Mineral Leases: Business Areas: Residence Areas: Miscellaneous Leases (Salt and Gypsum).	Holdings under Miners' Rights: Gold Mining Leases: Mineral Leases: Business Areas: Residence Areas: Miners' Homestead Leases.	Holdings under Miners' Rights: Prospectors' Licences: Gold Mining Leases: Mineral Leases.
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SETTLEMENT OF DISCHARGED SOLDIERS AND SAILORS.

Perpetual Leases: Pastoral Leases: Agreements to Purchase.	Ordinary Tenure: Special Tenure.	Free Grants: Ordinary Tenure: Special Tenure.
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AGRICULTURAL GRADUATES SETTLEMENT ACTS.

Agreements to Purchase.		
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§ 2. Free Grants, Reservations, and Dedications.

1. *New South Wales.*—(i) *Free Grants.* Crown lands may, by notification in the *Gazette*, be dedicated for public purposes and be granted therefor in fee-simple. Such lands may be placed under the care and management of trustees, not less than three in number, appointed by the Minister.

(ii) *Reservations.* Temporary reservations of Crown lands from sale or lease may be made by the Minister.

(iii) *Areas Granted and Reserved.* During the year 1928–29, the total area for which free grants were prepared was 3,016 acres, including grants of 2,118 acres of land resumed under the 12th clause of the Public Roads Act 1902. During the same period 906 acres were dedicated and permanently reserved, the number of separate dedications being 76.

On the 30th June, 1929, the total area reserved, including temporary reserves, was 17,531,167 acres, of which 5,304,797 acres were for travelling stock, 2,366,444 acres for forest reserves, 669,601 acres for water, 1,160,069 acres for mining, and the remainder for temporary commons, railways, recreation reserves and parks, reserves for aborigines, and miscellaneous purposes.

2. *Victoria.*—(i) *Free Grants.* The Governor may grant, convey or otherwise dispose of Crown lands for public purposes.

(ii) *Reservations.* The Governor may temporarily or permanently reserve from sale, lease or license any Crown lands required for public purposes, and may except any area of Crown lands from occupation for mining purposes or for residence or business under any miner's right or business licence.

(iii) *Areas Granted and Reserved.* During the year 1928, 216 acres were granted without purchase, and reservations of both a permanent and temporary nature, comprising a net area of 16,029 acres, were made. At the end of 1928, the total area reserved was 7,589,767 acres, consisting of roads, 1,794,218 acres ; water reserves, 314,368 acres ; agricultural colleges, etc., 87,062 acres ; permanent forests and timber reserves under Forests Act, 4,305,581 acres ; forests and timber reserves under Land Acts, 329,385 acres ; reserves in the Mallee, 410,000 acres ; and other reserves, 349,153 acres.

3. *Queensland.*—(i) *Free Grants.* The Governor may grant in trust any Crown land which is or may be required for public purposes. Under the Irrigation Act land to be used for the purpose of any undertaking under that Act may be vested in fee-simple in the Irrigation Commission.

(ii) *Reservations.* The Governor may reserve from sale or lease, either temporarily or permanently, any Crown land which is or may be required for public purposes. Reserved lands may be placed under the control of trustees who are empowered to lease the same for not more than 21 years with the approval of the Minister.

Under the State Forests and National Parks Act, the Governor may permanently reserve any Crown lands and declare them to be a State Forest or a National Park.

(iii) *Areas Granted and Reserved.* During the year 1929, the area of reserves cancelled was 17,256 acres more than the area set apart as reserves. The total area reserved up to the end of 1929 was 17,703,438 acres, made up as follows :—timber reserves, 3,410,757 acres ; State forests and national parks, 1,954,123 acres ; for use of aborigines, 6,149,192 acres ; and general, 6,189,366 acres.

4. *South Australia.*—(i) *Free Grants.* The Governor may dedicate Crown lands for any public purpose and grant the fee-simple of such lands, with the exception of foreshores and land for quays, wharves or landing-places, which are inalienable in fee-simple from the Crown.

(ii) *Reservations.* The Governor may reserve Crown lands for (a) the use and benefit of aborigines, (b) military defence, (c) forest reserves, (d) railway stations, (e) park lands, or (f) any other purpose that he may think fit.

(iii) *Areas Granted and Reserved.* During the year 1929 free grants were issued for a total area of 276 acres. During the same year reserves comprising 13,141 acres were proclaimed. At the 30th June, 1929, the total area reserved was 16,336,484 acres.

5. Western Australia.—(i) *Free Grants.* The Governor may dispose of, in such manner as for the public interest may seem best, any lands vested in the Crown for public purposes, and may grant the fee-simple of any reserve to secure the use thereof for the purpose for which such reserve was made.

(ii) *Reservations.* The Governor may reserve any lands vested in the Crown for public purposes. Areas not immediately required may be leased from year to year. Reserves may be placed under the control of a local authority or trustees, with power to lease them for a period not exceeding 21 years, or may be leased for 99 years. Temporary reserves may also be proclaimed.

(iii) *Areas Granted or Reserved.* During the year ended 30th June, 1929, a few small areas of land were granted in fee-simple, and approximately 1,601,954 acres were reserved for various purposes. At the 30th June, 1929, the total area reserved was about 32,600,000 acres.

6. Tasmania.—(i) *Free Grants.* The only mention in the Crown Lands Act respecting free grants of land is that the Governor may agree with the Governor-General of the Commonwealth for the grant of any Crown land to the Commonwealth, and it is expressly stated that no lands may be disposed of as sites for religious purposes except by way of sale under the Act. Under the Returned Soldiers' Settlement Act of 1916, returned soldiers who applied prior to 31st March, 1922, are eligible to receive free grants of Crown land not exceeding £100 each in value, but these grants are conditional on the land being adequately improved.

(ii) *Reservations.* The Governor in Council may except from sale or lease, and reserve to His Majesty any Crown land for public purposes, and vest for such term as he thinks fit any land so reserved in any person or corporate body. Any breach or non-fulfilment of the conditions upon which such land is reserved renders it liable to forfeiture. A school allotment, not exceeding 5 acres in area, may also be reserved.

(iii) *Areas Granted or Reserved.* During the year ended 31st December, 1928, the area granted free was 577 acres, all of which was granted to soldiers under the Returned Soldiers' Settlement Act, while during the same year, free leases were issued to 2 local bodies for municipal purposes, and 521,410 acres were reserved, of which 520,900 acres were for forest reserves, 4 acres for recreation purposes, 56 acres for gravel reserves, 10 acres for school purposes, and 440 acres for a sanctuary for game. The total area reserved to the end of 1928 was 4,778,590 acres.

7. North Australia and Central Australia.—(i) *Reservations.* The Governor-General may resume for public purposes any Crown lands, not subject to any right of or contract for purchase, and may reserve, for the purpose for which they are resumed, the whole or any portion of the land so resumed.

(ii) *Areas Reserved.* The area of land held under reserve at the 30th June, 1929, was—North Australia, 7,990 square miles, and Central Australia, 21,875 square miles.

§ 3. Unconditional Purchases of Freehold.

1. New South Wales.—(i) *Auction Purchases.* Crown lands, not exceeding in the aggregate 200,000 acres in any one year, may be sold by public auction in areas not exceeding half-an-acre for town lands, 20 acres for suburban lands, and 640 acres for country lands, at the minimum upset price of £8, £2 10s., and 15s. per acre respectively. At least 10 per cent. of the purchase-money must be paid at the time of sale, and the balance within three months, or the Minister may allow the payment of such balance to be deferred for a period not exceeding 10 years, 5 per cent. interest being charged. Town blocks in irrigation areas may also be sold by auction.

(ii) *After-auction Purchases.* In certain cases, land offered at auction and not sold may be purchased at the upset price, but one-quarter of the purchase-money must be paid as deposit with the application, and the balance as notified in the *Gazette*. Any such application is, however, subject to the approval of the Minister.

(iii) *Special Purchases.* Under certain circumstances, land may be sold in fee-simple, the purchaser paying the cost of survey and of reports thereon, in addition to the purchase-money. The minimum upset price per acre is the same as in the case of land sold by auction.

(iv) *Improvement Purchases.* The owner of improvements in authorized occupation by residence, under any mining or Western Lands Act of land within a gold-field or mineral field, may purchase such land without competition at a price determined by the local Land Board, but at not less than £8 per acre for town lands or £2 10s. per acre for other lands. The area must not exceed $\frac{1}{4}$ acre within a town or village, or 2 acres elsewhere, and no person may purchase more than one such area within 3 miles of a similar prior purchase by him.

2. *Victoria.*—(i) *General.* Lands specially classed for sale by auction may be sold by auction in fee-simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at any higher price determined. The purchaser must pay the survey fee at the time of the sale, together with a deposit of $12\frac{1}{2}$ per cent. of the whole price; the residue is payable in equal half-yearly instalments with interest. Any unsold land in a city, town or borough, areas specially classed for sale, isolated pieces of land not exceeding 50 acres in area, and sites for churches or charitable purposes, if not more than three acres in extent, may be sold by auction on the same terms. Swamp or reclaimed lands may also be sold by auction, subject to the condition that the owner keeps open all drains, etc., thereon.

(ii) *Areas sold at Auction and by Special Sales.* During the year 1928, a total of 1,309 acres was disposed of under this tenure, 676 acres being country lands, while 633 acres of town and suburban lands were sold by auction.

3. *Queensland.*—During the years 1917 to 1929 the law precluded land being made available for any class of selection which gave the selector the right to acquire the freehold title. By reason of the amending Act of 1929 it is now possible to obtain a deed of grant in fee-simple.

4. *South Australia.*—(i) *Sales by Auction.* The following lands may be sold by auction for cash :—(a) special blocks, (b) Crown lands which have been offered for lease and not taken up within 2 years, (c) town lands, and (d) suburban lands, which the Governor excepts from the operations of the Land Board. A purchaser must pay 20 per cent. of the purchase money in cash, and the balance within one month or within such extended time as the Commissioner of Crown Lands may allow. Town lands may be sold subject to the condition that they cannot be transferred or mortgaged for 6 years.

(ii) *Areas Sold, etc.* During the year ended 30th June, 1929, the area of town lands sold by auction was 62 acres. In addition, 16,451 acres were sold at fixed prices, and the purchases of 84,190 acres on credit were completed, making a total of 100,703 acres.

5. *Western Australia.*—(i) *Sales by Auction.* Town, suburban, and village lands, after being surveyed into lots and notified in the *Gazette*, must be sold by auction. Ten per cent. of the purchase money must be paid in cash, together with the value of any improvements, and the balance in four equal quarterly instalments. Suburban land must be fenced within 2 years, and, until that is effected, no Crown grant may be issued.

(ii) *Areas Sold.* During the year ended 30th June, 1929, the area of town and suburban allotments sold was 1,503 acres in 712 allotments.

6. *Tasmania.*—(i) *Sales by Auction.* Town lands may be sold by auction for cash or on credit, no conditions being imposed beyond the payment of the purchase money. No town land, the price of which is less than £15, may be sold on credit.

(ii) *After-auction Sales.* Town lands, not within 5 miles of any city, which, after having been offered at auction, have not been sold, may be sold at the upset prices by private contract.

(iii) *Sales of Land in Mining Towns.* Any town land in a mining area may be sold by auction for cash, provided that any person, being the holder of a residence licence or business licence in lawful occupation of a residence area or business area and the owner of permanent improvements of a value equal to or greater than the upset price, is entitled to purchase such area at the upset price, prior to the sale by auction. The upset price of the unimproved value must not be less than £10, and the area must not exceed $\frac{1}{2}$ acre.

(iv) *Areas Sold.* During the year 1928 the area sold by auction or by special sale amounted to 177 acres, as against 300 acres for the previous year.

§ 4. Conditional Purchases of Freehold.

1. *New South Wales.*—(i) *General.* The various methods of obtaining Crown lands by conditional purchase are given in some detail in preceding issues of the Official Year Book (see No. 22 pp. 141-2), but it is not proposed to repeat this information in the present volume.

(ii) *Areas Sold by Auction, by Special Purchase, and by Improvement Purchase (exclusive of Town Blocks within Irrigation Areas).* During the year ended 30th June, 1929, the total area sold was 4,489 acres, of which 1,422 acres were sold by auction and 383 acres as after-auction purchases, while 15 acres were sold as improvement purchases and 2,669 acres as special purchases. The amount realized for the sale of the whole area was £104,034.

(iii) *Areas Alienated as Conditional Purchases.* At the 30th June, 1929, the total number of conditional purchases in existence was 66,170, covering an area of 20,019,758 acres. The following table gives particulars of conditional purchases, including non-residential conditional purchases and special area conditional purchases, for the year ended 30th June, 1929, together with the total area for which deeds had been issued up to 30th June, 1929 :—

CONDITIONAL PURCHASES, NEW SOUTH WALES, 1928-29.

Year ended 30th June—	Applications Received.(a)		Applications Confirmed.(a)		Areas for which Deeds have been Issued.	
	Number.	Area.	Number.	Area.	During the Year.	To end of Year.
		Acres.		Acres.	Acres.	Acres.
1929	311	62,117	178	35,667	315,353	23,442,488

(a) Exclusive of conversions from other tenures.

2. *Victoria.*—(i) *General.* Allusion to the methods of obtaining Crown lands by conditional purchase will be found on pp. 143-4 of Official Year Book No. 22.

(ii) *Areas Purchased Conditionally.* Exclusive of selection in the Mallee country, the total area purchased conditionally in 1928 was 68,686 acres, comprising 54,477 acres with residence and 14,209 acres without residence. The number of selectors was 335.

3. *Queensland*.—From 1917 until the passing of "The Lands Acts Amendment Act of 1929" a selector was unable to acquire the freehold title to land. The 1929 measure, however, amended the law in this respect, but considerations of space preclude the publication of details herein.

4. *South Australia*.—(i) *General*. The various methods of obtaining Crown lands by conditional purchase will be found in Official Year Book No. 22, pp. 144-5.

(ii) *Lands Allotted*. The land allotted under Agreements to Purchase, exclusive of land for Soldier Settlement, during the year 1928-29 was 237,309 acres, comprising Eyre's Peninsula Railway Lands 144,281 acres, Murray Railway Lands 27,763 acres, Pinnaroo Railway Lands 34,686 acres, Closer Settlement Lands 1,948 acres, Buckleboo Railway Lands 4,869 acres, and other Crown lands 23,762 acres.

5. *Western Australia*.—(i) *General*. Allusion to the methods of obtaining Crown lands by conditional purchase is made in some detail in Official Year Book No. 22, pp. 145-7.

(ii) *Areas Alienated*. During the year ended the 30th June, 1929, the number of holdings for which Crown grants were issued was 2,641, covering free homestead farms 50,696 acres and conditional purchases 490,160 acres. The number of holdings conditionally alienated for the year was 2,601, the total area affected being 2,594,175 acres, comprising conditional purchases by deferred payments with residence and without residence of 2,494,944 and 20,433 acres respectively, conditional purchases by direct payments (without residence) 1,075 acres, and free homestead farms 77,723 acres. Under the heading "Deferred payments (with residence)" are included conditional purchases of grazing lands.

6. *Tasmania*.—(i) *General*. Preceding issues of the Official Year Book (see No. 22, pp. 148-9) give details regarding the methods of acquiring Crown lands by conditional purchase, but it is not proposed to repeat the information in this volume.

(ii) *Areas Conditionally Purchased*. During the year 1928, conditional purchases of 31,499 acres were completed. The total area sold conditionally was 16,019 acres, comprising selections for purchase 15,557 acres, auction sales on credit 172 acres, and town and suburban allotments 290 acres. The numbers of applications received and confirmed during the year were 488 and 199 respectively.

§ 5. Leases and Licences under Land Acts.

1. *New South Wales*.—(i) *General*. Information regarding the methods of obtaining leases and licences of Crown lands is given in preceding issues of the Official Year Book (see No. 22, pp. 149-152), but it is not proposed to repeat this information in the present issue.

(ii) *Areas Occupied under Leases and Licences*. On the 30th June, 1929, the area of leases and licences under the control of the Department of Lands, the Water Conservation and Irrigation Commission, and the Western Land Board, comprised 113,853,585 acres of Crown lands.

The following table shows the areas which were granted under lease or licence during the year 1928-29, and those held under various descriptions of leases and licences at the end of that year:—

AREAS (a) TAKEN UP AND (b) OCCUPIED UNDER LEASE OR LICENCE.—NEW SOUTH WALES, 1928–29.(a)

Particulars.	Area taken up during the Year.	Particulars.	Area occupied at end of Year.
<i>Areas taken up under Crown Lands Act.</i>		<i>Acres.</i>	
Occupation licences	27,350	Outgoing pastoral leases ..	173,780
Conditional leases	52,608	Occupation licences (i) Ordinary ..	2,482,666
Conditional purchase leases ..	..	(ii) Preferential ..	469,132
Settlement leases	936	Homestead leases .. ..	..
Improvement leases	15,000	Conditional leases	12,043,999
Annual leases	90,628	Conditional purchase leases ..	182,754
Scrub leases	4,140	Settlement leases	2,967,596
Special leases	98,316	Improvement leases	1,037,713
Residential leases	232	Annual leases	1,247,422
Permissive occupancies	320,761	Scrub leases	464,366
Prickly-pear leases .. ..	..	Snow leases	177,746
Crown leases	479,987	Special leases	753,550
Homestead farms	180,364	Inferior land leases	69,192
Homestead selections and grants ..	52,721	Residential leases (on gold and mineral fields)	8,752
Suburban holdings	515	Church and school lands	11
Week-end leases	44	Permissive occupancies (b)	3,904,073
Leases of town lands .. ..	..	Prickly-pear leases	34,400
Returned soldiers' special holdings ..	..	Crown leases	5,460,250
Inferior land leases	23,460	Homestead farms	3,996,621
Irrigation farms	1,871	Homestead selections and grants ..	1,198,737
Snow leases .. ..	..	Suburban holdings	58,422
		Week-end leases	232
<i>Areas taken up under Western Lands Act.</i>		Leases of town lands	114
Leases	162,856	Returned soldiers' special holdings ..	17,250
Permissive occupancies	26,020	Irrigation farms and blocks	240,017
		Western land leases and licences (c) ..	76,865,790
Total	1,487,805	Total	113,853,585

(a) See also § 7. 1. (vii), hereinafter. (b) Permissive occupancies in the Western Division not included. (c) Includes permissive occupancies.

2. **Victoria.**—(i) *General.* Information regarding the methods of obtaining leases and licences of Crown lands may be found in preceding issues of the Official Year Book (see No. 22, pp. 154–5).

(ii) *Areas held under Leases and Licences.* The area of Crown lands occupied under leases and licences in 1928 was 7,997,700 acres, comprising grazing licences (exclusive of Mallee) 5,908,137 acres, Mallee lands 1,954,680 acres, auriferous lands (licences) 40,904 acres, swamp lands (leases) 2,514 acres, perpetual leases 5,046 acres, and perpetual leases under Mallee Lands Acts 1896–1901 86,414 acres.

3. **Queensland.**—(i) *General.* In preceding issues of the Official Year Book reference was made to the methods of obtaining leases and licences of Crown lands (see No. 22, pp. 155–7). The Land Acts Amendment Act of 1929, however, amended the law considerably, but limitations of space preclude the inclusion of a detailed account in this issue.

(ii) *Areas taken up under Lease or Licence.* The total area taken up under lease or licence during the year 1928 was 31,045,064 acres, made up as follows:—Pastoral leases 19,350,000 acres; occupation licences 4,948,520 acres; grazing farms 508,681 acres; grazing homesteads 3,535,020 acres; perpetual lease selections 161,518 acres; perpetual lease prickly-pear selections 234,469 acres; auction perpetual leases—town 114 acres, suburban 121 acres, and country 1,309 acres; special leases 13,541 acres; leases of reserves 57,251 acres, and prickly-pear leases 2,234,520 acres.

The following particulars are available respecting leases taken up in 1929:—

Grazing farms	443,997 acres.
Grazing homesteads	3,134,030 acres.
Perpetual lease selections	178,858 acres.
Perpetual lease prickly-pear selections	257,255 acres.

The gross area held at the end of the year 1928 for purely pastoral purposes was 360,316 square miles.

Seven non-competitive perpetual leases were issued during 1928, the total area being 105 acres.

The total areas occupied under lease or licence will be found in a table at the end of this chapter.

4. *South Australia.*—(i) *General.* The methods by which Crown lands may be obtained by lease or licence are given at some length in preceding Year Books (see No. 22, pp. 157–8).

(ii) *Areas Leased.* The total area leased during 1928–29 under the different forms of lease tenure was 241,557 acres, made up as follows:—Perpetual leases—irrigation and reclaimed lands 1,362 acres, non-irrigable land in irrigation areas 3,062 acres, and other Crown lands 133,186 acres; and miscellaneous leases—grazing 74,558 acres, grazing and cultivation 28,503 acres, and closer settlement lands 886 acres.

The total areas held under lease are given in the table at the end of this chapter.

5. *Western Australia.*—(i) *General.* In preceding Year Books some account is given of the methods of acquiring Crown lands under various forms of leasehold tenure (see No. 22, p. 159).

(ii) *Areas Leased.* The number of leases issued by the Lands Department during the year ended 30th June, 1929, was 346, and the total area of leases issued 14,872,131 acres, comprising pastoral leases 14,777,802 acres, special leases 5,548 acres, and leases of reserves 88,781 acres.

The total areas leased are given in the table at the end of this chapter.

6. *Tasmania.*—(i) *General.* The various forms of tenure of Crown lands under leases, licences, or permits are alluded to in some detail in preceding issues of the Official Year Book (see No. 22, pp. 160–1).

(ii) *Areas Leased.* The area of pastoral leases during the year 1928 was 233,225 acres.

The total areas leased are given in the table at the end of this chapter.

7. *North Australia and Central Australia.*—(i) *General.* Reference to the various forms of tenure of Crown lands under leases, licences, and permits may be found in Official Year Book No. 22, pp. 161–2.

(ii) *Areas held under Leases, Licences, and Permits.* The following table shows the total areas held under lease, licence, and permit, and areas of reserves, at the end of the year 1929:—

NORTHERN TERRITORY.—AREAS HELD UNDER LEASES, LICENCES, OR PERMITS, AND AREAS OF RESERVES, 1929.

Particulars.	North Australia.	Central Australia.	Total.
Leases and licences—	Square Miles.	Square Miles.	Square Miles.
Pastoral leases	132,765	69,579	202,344
Pastoral permits	2,057	..	2,057
Grazing licences	21,533	5,829	27,362
Agricultural leases	202	..	202
Miscellaneous leases, including water leases ..	51	387	438
Total	156,608	75,795	232,403
Reserves—			
Aboriginal native	7,990	21,875	29,865
Prospecting for mineral oil and coal	1,220	..	1,220
Mission station	1,027	901	1,928
Other	1,931	..	1,931
Total	12,168	22,776	34,944

8. **Federal Capital Territory.**—(i) *General.* Reference to the various leases of Crown lands may be found in Official Year Book No. 22, p. 163.

(ii) *Areas of Acquired, Leased, etc., Lands.* At the end of the year 1929 the area of acquired lands was 213,830 acres; of lands alienated, 46,968 acres; of lands in process of alienation, 60,844 acres; of leases, 288,919 acres; and unoccupied, 179,269 acres. These figures are exclusive of 17,920 acres in the Jervis Bay area.

The number of leases granted under the City Area Leases Ordinance 1924–29 to the 30th June, 1929, was 462 representing a capital value of £264,926.

Seven leases for church purposes have been granted under the Church Lands Leases Ordinance 1924–27, which require the lessees to submit a definite building programme within a specified period.

Five leases have been granted to date under the Leases (Special Purposes) Ordinance 1925–29, for church and scholastic purposes.

One hundred and seventy-two leases granted under the City Area Leases Ordinance have been surrendered or forfeited, representing a capital value of £90,621.

§ 6. Closer Settlement.

1. **New South Wales.**—(i) *General.* Particulars regarding the methods of acquisition and disposal of land for closer settlement are given in preceding Year Books (see No. 22, pp. 163–4), but this information will not be repeated in the present volume.

(ii) *Areas Acquired and Disposed of.* Up to the 30th June, 1929, 1,855 estates, including 953 single farm propositions acquired for discharged soldiers or sailors, had been acquired for closer settlement.

The number of farms allotted under the Promotion Sections of the Closer Settlement Acts to date is 3,790, the area 1,816,607 acres, and the amount advanced by the Crown £8,433,927.

The following statement gives particulars of the aggregate areas opened up to the 30th June, 1929:—

CLOSER SETTLEMENT AREAS (a).—NEW SOUTH WALES, 1928–29.

To 30th June—	Areas.			Values.		
	Acquired Lands.	Adjoining Crown Lands.	Total.	Cost of Acquired Lands.	Value of Adjoining Crown Lands.	Total.
	Acres.	Acres.	Acres.	£	£	£
1929	4,019,082	125,212	4,144,294	14,302,137	213,200	14,515,337

(a) Includes 64 long-term leases resumed for closer settlement.

The total area was divided into 7,849 farms, comprising 4,109,378 acres, the remaining area being reserved for public purposes (roads, stock routes, schools, etc.).

The following table gives particulars regarding the disposal of the farms by closer settlement purchase for the year ended 30th June, 1929:—

CLOSER SETTLEMENT ALLOTMENTS.—NEW SOUTH WALES, 1928–29.

To 30th June—	Farms Allotted to Date.			Total Amount received in respect of Closer Settlement Farms.
	Number.	Area.	Capital Value.	
	No.	Acres.	£	
1929	7,790	4,090,091	14,911,927	£ 6,438,200

2. *Victoria.*—(i) *General.* The methods of acquiring and of disposing of land for closer settlement are given in some detail in preceding issues of the Official Year Book (see No. 22, pp. 165-6).

(ii) *Areas acquired and made available for Closer Settlement.* The following statement shows the operations under the provisions of the Closer Settlement Acts during the year 1928-29:—

CLOSER SETTLEMENT.—VICTORIA, 1928-29.

(INCLUDING IRRIGATED AREAS.)

Year ended 30th June.	Total Area Acquired by Government to Date.	Total Cost to Date.	How Made Available for Settlement.						Number of Applications Granted to Date.	Total Receipts to Date.	Repayments of Principal to Date.	Area Available for Settlement.
			Farm Allotments.	Workmen's Homes Allotments.	Agricultural Labourers' Allotments.	Town Allotments. (a)	Roads and Reserves.	No.				
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£	Acres.	
1929	1,028,310	7,997,142	944,227	786	3,586	54,974	2,630	6,806	7,594,570	1,991,833	22,106	

(a) Includes all land sold other than under Conditional Purchase Lease.

3. *Queensland.*—(i) *General.* Information regarding methods of acquiring and of disposing of land for closer settlement will be found in Official Year Book No. 22, pp. 166-7.

(ii) *Areas Acquired and Selected.* The total area acquired to 30th June, 1929, was 970,778 acres, costing £2,292,881. The following are the particulars of transactions under the Closer Settlement Act for the year 1929:—Total area selected 907,736 acres; number of selectors 2,705; agricultural farms 2,107; unconditional selections 257; perpetual lease selections 587; prickly-pear selections 4; perpetual lease prickly-pear selections 7; area sold by auction 12,868 acres; and number of settlement farm leases 78.

4. *South Australia.*—(i) *General.* Allusion to the acquisition and disposal of land for closer settlement will be found in Official Year Book No. 22, p. 167.

(ii) *Areas Acquired and Selected.* The following table shows the area of land acquired for the purposes of closer settlement, and the manner in which it has been dealt with for the year ending 30th June, 1929:—

CLOSER SETTLEMENT.—SOUTH AUSTRALIA, 1929.

Year ended 30th June—	Area of Lands Re- purchased.	Agree- ments with Covenants to Purchase.	Total Area Leased as Homestead Blocks.		Perpetual Leases.	Mis- cellaneous Leases.	Sold.	Remainder Un- occupied (including Roads and Land in Irrigation Areas).
			Right of Purchase.	Perpetual Lease.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1929 ..	777,416	519,425	321	1,242	35,084	133	187,124	34,087

The total area repurchased at 30th June, 1929, was 777,416 acres. The purchase money was £2,490,804. Of the total area, 743,329 acres have been allotted to 2,726 persons, the average area to each being 272 acres.

5. **Western Australia.**—(i) *General.* Preceding issues of the Official Year Book contain references to the methods of acquiring and of disposing of land for closer settlement (see No. 22, p. 168).

(ii) *Areas Acquired and Selected.* The total area acquired for closer settlement up to the 30th June, 1929, was 560,703 acres, costing £575,368. Of this area 18,308 acres have been set aside for roads, reserves, etc., leaving a balance of 542,395 acres available for selection. Particulars of operations under the Act for the year ending 30th June, 1929, are as follows:—Area selected during the year 22,320 acres; total area occupied to date 463,794 acres; balance available for selection 77,849 acres; and total revenue £543,075.

6. **Tasmania.**—(i) *General.* A brief statement regarding the acquisition and disposal of land for closer settlement is given in preceding issues of the Official Year Book (see No. 22, pp. 168–9).

(ii) *Areas Acquired and Selected.* Up to the 30th June, 1929, 36 areas had been opened up for closer settlement. The total purchase money paid by the Government was £366,097, and the total area acquired amounted to 101,231 acres, including 10,000 acres of Crown lands.

7. **Summary.**—The following table gives particulars of operations under the Closer Settlement Acts at the 30th June, 1929:—

**CLOSER SETTLEMENT.—TOTAL AREAS ACQUIRED AND ALLOTTED AT
30th JUNE, 1929.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Area acquired (a) acres	4,144,294	1,023,310	970,778	777,416	560,703	101,231	7,582,732
Purchase price (b) £	14,302,137	7,964,453	2,292,881	2,490,804	575,368	366,097	27,991,740
Farms, etc., allotted	No. 7,790 acres 4,090,091	(c) 6,649 922,191	3,040 907,736	2,726 743,329	1,011 463,794	815 82,842	21,531 7,209,488

(a) Includes Crown lands—New South Wales, 125,212 acres; Victoria, 27,667 acres; Tasmania, 10,000 acres. (b) Private lands only. (c) Under conditional purchase lease.

§ 7. Leases and Licences under Mining Acts.

1. **New South Wales.**—(i) *General.* Information regarding the various forms of leases and licences under Mining Acts is given in preceding issues of the Official Year Book (see No. 22, p. 170).

(ii) *Areas Occupied under Mining Acts.* The following table gives particulars of operations for the year 1929:—

AREAS TAKEN UP UNDER MINING ACTS.—NEW SOUTH WALES, 1929.

Purposes for which Issued or Occupied.	Areas Taken up during Year.	Total Areas Occupied at End of Year.
	Acres.	Acres.
Gold-mining	1,254	4,571
Mining for other minerals	24,624	280,494
Authorities to prospect	(a) 918,016	11,673
Other purposes	225	13,759
Total	944,119	310,497

(a) Includes one area of 900,000 acres.

2. *Victoria.*—(i) *General.* Particulars of the various forms of leases and licences under Mining Acts are given in preceding issues of the Official Year Book (see No. 22, p. 171).

(ii) *Leases and Licences Issued.* During the year 1929, leases, licences, etc., were issued covering an area of 27,313 acres, the rent, fees, etc., for which amounted to £1,483. The area occupied at the end of the year was 57,807 acres.

3. *Queensland.*—(i) *General.* In preceding Official Year Books an account is given of the various forms of leases and licences under Mining Acts (see No. 22, pp. 171–2).

(ii) *Areas held under Lease or Licence.* During the year 1929 the number of miners' rights issued was 3,871, and of business licences 10. The following table gives particulars regarding the areas of lands taken up under lease or licence, and the total areas occupied for the year 1929. In addition, an area estimated at 25,000 acres was at the end of 1929 held under miners' rights and dredging claims.

AREAS TAKEN UP UNDER MINING ACTS.—QUEENSLAND, 1929.

Particulars.	Areas Taken up during Year.	Total Areas Occupied at End of Year.
	Acres.	Acres.
Gold-mining	187	535
Mining for other minerals .. .	2,571	24,484
Coal-prospecting licences .. .	880	4,080
Miners' homestead leases .. .	20,205	315,759
Mineral oil-prospecting areas .. .		
Petroleum-prospecting Permits .. .	1,296,230	3,405,196
Total	1,320,073	3,750,054

4. *South Australia.*—(i) *General.* Reference to the various forms of leases and licences under Mining Acts is given in preceding issues of the Official Year Book (see No. 22, p. 173).

(ii) *Areas Occupied under Mining Acts.* The following table gives particulars of operations for the year 1929:—

AREAS TAKEN UP UNDER MINING ACTS.—SOUTH AUSTRALIA, 1929.

Particulars.	Areas Taken up during Year.	Total Areas Occupied at End of Year.
	Acres.	Acres.
Gold-mining leases	207	512
Mineral and miscellaneous leases .. .	12,973	54,927
Claims	15,165	15,434
Search licences and permits .. .	183,680	199,680
Occupation licences	8	60
Total	212,033	270,613

5. *Western Australia.*—(i) *General.* A brief explanation of the various forms of leases and licences under Mining Acts will be found in Official Year Book No. 22, pp. 174-5.

(ii) *Particulars of Areas Occupied.* The following table gives particulars of operations for the year 1929, the figures being exclusive of holdings under miners' rights and mineral oil licences. Of the areas shown as taken up in 1929, the area under lease was 1,042 acres for gold-mining, 924 for mining for other minerals, and 1,251 for miners' homesteads—a total of 3,217 acres. The balance was taken up under licences.

AREAS TAKEN UP UNDER MINING ACTS.—WESTERN AUSTRALIA, 1929.

Particulars.	Areas Taken up during Year.	Total Areas Occupied at End of Year.
	Acres.	Acres.
Gold-mining	10,720	14,249
Mining for other minerals	29,386	103,187
Other Purposes	1,313	33,371
Total	41,419	150,807

6. *Tasmania.*—(i) *General.* A description of the various forms of leases and licences under Mining Acts is given in preceding Official Year Books (see No. 22, pp. 175-6).

(ii) *Leases and Licences Issued and Areas Occupied.* During the year 1929, the number of leases issued was 226, of which the more important were 16 for gold-mining, covering 303 acres; and 93 for tin, covering 4,369 acres. Five licences to search for coal and oil were also granted. The following table gives particulars of operations for the year 1929:—

AREAS TAKEN UP UNDER MINING ACTS.—TASMANIA, 1929.

Particulars.	Areas Taken up during Year.	Total Areas Occupied at End of Year.
	Acres.	Acres.
Gold-mining	311	746
Mining for other minerals	9,042	38,074
Licences to search for coal or oil	5,744	10,844
Other purposes	254	3,695
Total	15,351	53,359

7. *Northern Territory.*—(i) *General.* A brief statement regarding the various forms of leases and licences under Mining Acts is given in Official Year Book No. 22, pp. 176-7.

(ii) *Leases Issued and Areas Occupied.* (a) *North Australia.* During 1928–29, 15 mineral blocks with an area of 245 acres were taken up. At the 30th June, 1929, there existed 22 mineral leases for 543 acres, 7 gold-mining leases for 116 acres, and protected mining lease applications for 47 blocks covering 1,025 acres. In addition, 5 exclusive prospecting licences covering approximately 23½ square miles were issued.

(b) *Central Australia.* During 1928–29, 26 gold-mining blocks with an area of 720 acres and 23 mineral blocks (875 acres) were taken up. At the 30th June, 1929, a total area of 1,200 acres was held under gold-mining leases and approved gold-mining leases and 2,015 acres under mineral leases and approved mineral leases.

8. *Summary.*—The following table shows the areas under leases and licences for mining purposes and the total areas occupied for mining purposes for the year 1929 :—

CROWN LANDS, LEASES AND LICENCES FOR MINING PURPOSES, 1929.

Year.	N.S.W.	Victoria.	Q'land.(a)	S. Aust.(a)	W. Aust.(a)	Tas.(a)	Total.
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AREAS FOR WHICH LEASES AND LICENCES ISSUED DURING YEAR.

1929	Acres. (b) 944,119	Acres. 27,313	Acres. 1,320,073	Acres. 212,033	Acres. 41,419	Acres. 15,351	Acres. 2,660,308
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TOTAL AREAS OCCUPIED AT END OF YEAR.

1929	310,497	57,807	3,750,054	270,613	150,807	53,359	4,593,137
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(a) Exclusive of lands held under miners' rights only. (b) Includes one area of 900,000 acres.

§ 8. Settlement of Returned Soldiers and Sailors.

1. *General.*—Information in regard to the methods adopted in each State for providing land for the settlement of returned soldiers and sailors, together with the conditions under which such land could be acquired, is given in preceding issues of the *Official Year Book* (see No. 18, pp. 187–189), but limits of space preclude its repetition herein.

Particulars respecting the position of soldier settlement in each State at the latest available date are, however, given in the sub-sections immediately following.

2. *New South Wales.*—At the 30th June, 1929, the area set apart exclusively for soldiers was 9,720,123 acres, of which 1,912,664 acres comprised acquired land. The number of soldiers settled was 9,848, of whom 3,487 subsequently transferred, forfeited, or surrendered their holdings. The area of the farms held at that date was 8,085,286 acres, of which 6,492,057 acres were Crown lands (including 4,138,613 acres in the Western Division taken up under the *Western Lands Act*), 1,527,611 acres of acquired lands, and 65,618 acres within *Irrigation Areas*.

3. *Victoria.*—At the 30th June, 1929, the area acquired or set apart for soldier settlement was 2,426,714 acres, of which 1,762,547 acres comprised private land purchased at a cost of £13,355,563. The number of farms allotted was 8,280, containing 2,225,342 acres.

4. **Queensland.**—At the 30th June, 1929, the area acquired or set apart for soldier settlement was 577,633 acres, of which 41,101 acres comprised private land, purchased at a cost of £270,480. The number of farms allotted was 1,148, containing 440,992 acres. Some of these selections were acquired under the ordinary provisions of the Land Act, and do not include areas specially set apart for soldiers.

5. **South Australia.**—At the 30th June, 1929, the area acquired or set apart for soldier settlement was 2,915,660 acres, of which 1,563,050 acres comprised private land purchased at a cost of £4,358,042. The number of farms allotted was 2,638, containing 2,443,083 acres.

6. **Western Australia.**—At the 30th June, 1929, the area of land acquired or set apart for soldier settlement was 14,287,643 acres, of which 345,110 acres comprised private land purchased at a cost of £605,076. The number of farms allotted was 1,134, containing 14,287,643 acres. Assistance has been given to 5,213 returned soldiers, and the Agricultural Bank holds 3,661 properties as security for advances. The area held, including pastoral leases, is approximately 25,864,000 acres, and advances approved amount to £6,586,370.

7. **Tasmania.**—At the 30th June, 1929, the area acquired or set apart for soldier settlement was 339,000 acres, of which 268,209 acres comprised private land purchased at a cost of £2,010,225. The number of farms allotted was 1,968, containing 333,300 acres.

8. **Summary.**—The following table gives a summary of the area acquired, the purchase price thereof, and the number and area of farms allotted in all the States to the 30th June, 1929:—

**SOLDIER SETTLEMENT.—AREAS ACQUIRED AND ALLOTTED AT
30th JUNE, 1929.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Area acquired or set apart—							
(i) Private land acquired .. acres	1,912,664	1,762,547	41,101	1,563,050	345,110	268,209	5,892,681
(ii) Crown lands set apart ..	7,807,459	664,167	536,532	1,352,610	13,942,533	70,791	24,374,092
Farms, etc., allotted { No.	(a) 6,361	8,280	1,148	2,638	1,134	1,968	21,529
{ acres	8,085,286	2,225,342	440,992	2,443,083	14,287,643	333,300	27,815,646
Price paid by Government for private land acquired .. £	8,085,108	13,355,563	270,480	4,358,042	605,076	2,010,225	28,684,494

(a) Farms occupied.

§ 9. Tenure of Land by Aliens.

Information regarding the terms and conditions under which land can be held by aliens is contained in previous issues of the Official Year Book (see No. 18, pp. 190-1), but limits of space preclude its repetition in the present issue.

§ 10. Advances to Settlers.

1. New South Wales.—(i) *General*. A detailed statement regarding the terms and conditions governing advances to settlers will be found in preceding issues of the Official Year Book (see No. 22, pp. 179–180).

(ii) *Amount of Advances*. The following table gives particulars respecting advances, etc., to 30th June, 1929 :—

ADVANCES TO SETTLERS.—NEW SOUTH WALES, 1928–29.

Particulars.	Advances made during 1928–29.	Total Advances at 30th June, 1929.	Amount outstanding at 30th June, 1929.
	£	£	£
Government Savings Bank Advances ..	2,820,055	23,695,990	12,889,469
Soldier Settlement Advances ..	193,611	7,376,066	4,410,214
Advances for Purchase of Wire Netting ..	64,084	946,054	362,226
Advances to Necessitous Farmers ..	396,431	3,808,440	667,948
Advances to Civilian Settlers on Irrigation Areas	46,140	580,023	224,328
Shallow Boring Advances	59,056	539,097	220,250
Total	3,579,377	36,945,670	18,774,435

2. Victoria.—(i) *General*. In preceding issues of the Official Year Book an account is given of the terms and conditions governing advances to settlers (see No. 22, pp. 180–1).

(ii) *Amount of Advances*. The following table gives particulars respecting advances, etc., to 30th June, 1929 :—

ADVANCES TO SETTLERS.—VICTORIA, 1928–29.

Authority Making Advances.	Advances made to—	Advances made during 1928–29.	Total Advances at 30th June, 1929.	Amount Outstanding at 30th June, 1929.
		£	£	£
State Savings Bank	Civilians	973,754	9,013,055	4,459,236
	Discharged soldiers ..	107,030	694,485	529,158
Closer Settlement Board	Closer Settlement settlers	992,032	11,511,502	8,210,985
	Soldier settlers ..	126,271	22,437,953	18,253,582
Treasurer	Cool stores, canneries, etc.	..	615,182	438,689
Total .. ..	.. ..	2,199,087	44,272,177	31,891,650

3. Queensland.—(i) *General*. Reference may be made to preceding issues of the Official Year Book for detailed information regarding terms and conditions of advances to settlers (see No. 22, pp. 182–3).

(ii) *Amount of Advances.* The following table gives particulars of advances, etc., to 30th June, 1929 :—

ADVANCES TO SETTLERS.—QUEENSLAND, 1928-29.

Act under which Advances were made.	Advances made during Year 1928-29.	Total Advances made to 30th June, 1929.	Amount outstanding at 30th June, 1929.
	£	£	£
Agricultural Bank Act	313,584	5,414,159	2,513,794
Discharged Soldiers' Settlement Act (a)	8,349	2,369,510	1,385,910
Water Facilities	12,035	49,368	47,875
Wire Netting	69,849	691,018	521,854
Seed Wheat	2,964	(b) 54,205	9,907
Drought Relief .. .. .	..	67,401	46,571
Total	406,781	8,645,661	4,525,911

(a) Includes advances to group settlements through the Land Department as well as advances through the Agricultural Bank. (b) Includes accrued interest to 30th June, 1929.

4. South Australia.—(i) *General.* A brief statement regarding the terms and conditions of advances to settlers is given in preceding issues of the Official Year Book (see No. 22, pp. 183-4).

(ii) *Amount of Advances.* The following table gives particulars respecting advances, etc., to 30th June, 1929 :—

ADVANCES TO SETTLERS.—SOUTH AUSTRALIA, 30th JUNE, 1929.

Particulars.	Advances made during 1928-29.	Total Advances at 30th June, 1929.	Amount outstanding at 30th June, 1929.
	£	£	£
Department of Lands and Survey—			
Advances to soldier settlers	123,400	5,354,629	3,974,878
Advances to blockholders .. ..	..	41,451	117
Advances for sheds and tanks .. ..	..	75,693	61,417
Advances in drought-affected areas ..	212,862	1,142,147	374,452
Advances under Closer Settlement Acts ..	4,429	2,397,775	1,567,285
Advances under Agricultural Graduates Settlement Act	12,400	20,852	20,738
State Bank of South Australia	134,751	4,567,293	1,351,580
Advances to settlers for improvements ..	39,516	724,227	336,510
Advances under Vermin and Fencing Acts ..	73,802	1,206,539	426,694
Advances under Loans to Producers Act ..	18,981	193,004	175,852
Irrigation Commission—			
Civilians	13,187	242,886	137,343
Soldier settlers	36,540	(a) 1,170,803	1,096,915
Total	669,868	17,137,299	9,523,781

(a) Since June, 1927, a considerable sum has been written off advances to soldier settlers under Section 8 of the Discharged Soldiers' Settlement Relief Act 1925.

5. *Western Australia.*—(i) *General.* Reference to advances to settlers made by the Agricultural Bank, which was established in 1895, will be found in Official Year Book No. 22, p. 184.

(ii) *Amount of Advances.* The following table gives particulars respecting advances, etc., to 30th June, 1929 :—

ADVANCES TO SETTLERS.—WESTERN AUSTRALIA, 1928–29.

Particulars.	Advances made during Year 1928–29.	Total Advances at 30th June, 1929.	Amount outstanding at 30th June, 1929 (inclusive of interest).
	£	£	£
Development loans	648,603	7,297,989	4,510,359
Soldier settlement loans	74,845	5,891,089	4,898,319
Advances to rural industries	1,095	24,512	20,822
Cropping advances	532,497	12,619,100	1,711,278
Total	1,257,040	25,832,690	11,140,778

6. *Tasmania.*—(i) *General.* A description of the terms and conditions of advances to settlers is incorporated in previous issues of the Official Year Book (see No. 22, p. 185).

(ii) *Amount of Advances.* The following table gives particulars respecting advances, etc., to 30th June, 1929 :—

ADVANCES TO SETTLERS.—TASMANIA, 30th JUNE, 1929.

Authority making Advances.	Advances made to—	Advances made during 1928–29.	Total Advances to 30th June, 1929.	Amount outstanding at 30th June, 1929.
		£	£	£
Agricultural Bank	Settlers	62,379	374,155	251,043
"	Orchardists' Relief, 1926 .. .. .	..	46,832	35,094
Minister for Lands	Soldier Settlers	4,711	684,571	243,051
"	Closer Settlers	583	26,475	10,869
"	Fruit Growers .. .. .	..	1,897	543
Total .. .. .	.. .. .	67,673	1,133,930	540,600

7. *North Australia and Central Australia.*—(i) *General.* A brief statement explanatory of the terms and conditions of advances to settlers is given in preceding issues of the Official Year Book (see No. 22, p. 186).

(ii) *Amount of Advances.* During the financial year 1928–29 the sum of £2,737 was advanced, making the total amount advanced to the 30th June, 1929, £13,872 (approximately). The balance outstanding at 30th June, 1929, including interest, was £13,176.

8. *Summary of Advances.*—The following table gives a summary for each State to the 30th June, 1929 :—

ADVANCES TO SETTLERS.—AUSTRALIA, 30th JUNE, 1929.

State.	Advances made during 1928-29.	Total Advances to 30th June, 1929.	Amount outstanding at 30th June, 1929.
	£	£	£
New South Wales	3,579,377	36,945,670	18,774,435
Victoria	2,199,087	44,272,177	31,891,650
Queensland	406,781	8,645,661	4,525,911
South Australia	669,868	17,137,299	9,523,781
Western Australia	1,257,040	25,832,690	11,140,778
Tasmania	67,673	1,133,930	540,600
North and Central Australia ..	2,737	13,872	13,176
Total	8,182,563	133,981,299	76,410,331

§ 11. Alienation and Occupation of Crown Lands.

1. **General.**—The figures given in the previous parts of this chapter show separately the areas alienated, in process of alienation, or occupied under various tenures. The following tables set out in summarized form the position in regard to the tenure of land in each State, in the Northern Territory, and in the Federal Capital Territory during the latest year for which information is available. The area unoccupied includes roads, permanent reserves, forests, etc. In some cases, lands which are permanently reserved from alienation are occupied under leases and licences, and have been included therein. Lands occupied under leases or licences for pastoral purposes are frequently held on short tenures only, and could thus be made available for settlement practically whenever required.

2. **New South Wales.**—At the 30th June, 1929, of the total area of New South Wales, 22.0 per cent. had been alienated absolutely, 11.7 per cent. was in process of alienation, 57.6 per cent. was held under leases and licences, and the remaining 8.7 per cent. was unoccupied.

The following table gives particulars for the year ended 30th June, 1929 :—

ALIENATION AND OCCUPATION OF CROWN LANDS.—NEW SOUTH WALES, 1928-29.(a)

Particulars.	Acres.	Particulars.	Acres.
1. Alienated.		2. In Process of Alienation.	
Granted and sold prior to 1862	7,146,579	Conditional purchases ..	20,019,758
Sold by auction and other sales, 1862 to date	14,999,969	Closer settlement purchases ..	2,680,924
Conditionally sold, 1862 to date	23,442,489	Soldiers' group purchase ..	431,692
Granted under Volunteer Land Regulations, 1867 to date ..	172,198	Other forms of sale	21,491
Granted for public and religious purposes	254,946	Total	23,153,865
46,016,181		3. Held under Leases and Licences.	
Less lands resumed or reverted to Crown	2,524,197	Total under Lands Department, Water Conservation and Irrigation Commissioner, and Western Lands Commissioners	113,853,585
		Mineral and auriferous leases and licences (Mines Department)	310,497
		Total	114,164,082
Total	43,491,984	4. Unoccupied (approximate)	
			17,223,349

(a) Exclusive of Lord Howe Island, 3,220 acres.
Area of State—193,036,500 acres.

3. **Victoria.**—The total area of the State of Victoria is 56,245,760 acres, of which 46.3 per cent. had been alienated absolutely up to the end of the year 1928; 16.8 per cent. was in process of alienation under deferred payments and Closer Settlement Schemes; 14.3 per cent. was occupied under leases and licences; while 22.6 per cent. was unoccupied.

The following table shows the distribution:—

ALIENATION AND OCCUPATION OF CROWN LANDS.—VICTORIA, 1928.

Particulars.	Acres.	Particulars.	Acres.
1. <i>Alienated</i>	26,017,176	3. <i>Leases and Licences held—</i>	
2. <i>In Process of Alienation—</i>		Under Lands Department ..	7,997,700
Exclusive of Mallee, etc. ..	1,968,147	Under Mines Department ..	39,904
Mallee Lands	6,791,521		
Under Closer Settlement Acts ..	691,834	Total	8,037,604
Village Settlements	721		
		4. <i>Unoccupied Crown Lands</i> ..	12,738,757
Total	9,452,223		

Total area of State—56,245,760 acres.

4. **Queensland.**—The total area of this State is 429,120,000 acres, of which, on the 31st December, 1928, 4.2 per cent. was alienated absolutely; 1.5 per cent. was in process of alienation; and 73.5 per cent. was occupied under leases and licences. The remainder (20.8 per cent.) was either unoccupied or held as reserves, or for roads.

The distribution is shown in the following table:—

ALIENATION AND OCCUPATION OF CROWN LANDS.—QUEENSLAND, 1928.

Particulars.	Acres.	Particulars.	Acres.
1. <i>Alienated Absolutely—</i>		3. <i>Occupied under Leases and Licences—</i>	
By Purchase	18,083,349	Pastoral Leases	192,894,240
Without Payment	88,560	Occupation Licences	28,265,160
		Grazing Farms and Homestead	79,258,448
		Scrub Selections	16,444
		Leases—Special Purposes ..	680,231
		Under Mines Department ..	382,926
		Perpetual Lease Selections ..	4,433,145
		Auction Perpetual Leases ..	18,282
		Prickly-pear Leases	9,442,680
Total	18,171,909	Total	315,391,556
2. <i>In Process of Alienation</i> ..	6,307,783	4. <i>Unoccupied</i>	89,248,752

Total area of State—429,120,000 acres.

5. **South Australia.**—The area of the State of South Australia is 243,244,800 acres, and at the end of the year 1929, 5.0 per cent. was alienated absolutely; 1.6 per cent. in process of alienation; 48.6 per cent. occupied under leases and licences; and 44.8 per cent. unoccupied.

The subjoined table shows the distribution :—

ALIENATION AND OCCUPATION OF CROWN LANDS.—SOUTH AUSTRALIA,
1929.

Particulars.	Acres.	Particulars.	Acres.
1. <i>Alienated—</i>		3. <i>Held under Lease and Licence—</i>	
Sold	11,772,229	Right of Purchase Leases ..	1,790,517
Granted for Public Purposes	232,730	Perpetual Leases, including	
		Irrigation Leases ..	15,179,216
		Pastoral Leases ..	99,321,485
		Other Leases and Licences ..	1,683,082
		Mining Leases and Licences	270,613
Total	12,004,959	Total	118,249,913
2. <i>In Process of Alienation</i> ..	3,933,568	4. <i>Area Unoccupied</i>	109,056,860

Total area of State—243,244,800 acres.

6. Western Australia.—The total area of Western Australia is 624,588,800 acres, of which, at the 30th June, 1929, 2.2 per cent. was alienated absolutely ; 3.5 per cent. was in process of alienation ; while 39.0 per cent. was occupied under leases and licences issued either by the Lands or the Mines Departments. The balance of 55.3 per cent. was unoccupied.

The following table shows the distribution :—

ALIENATION AND OCCUPATION OF CROWN LANDS.—WESTERN AUSTRALIA,
1928–29.

Particulars.	Acres.	Particulars.	Acres.
1. <i>Alienated Absolutely</i> ..	13,594,254	3. <i>Leases and Licences in Force—</i>	
2. <i>In Process of Alienation—</i>		(i) Issued by Lands Department—	
Midland Railway Concessions	54,800	Pastoral Leases ..	239,726,147
Free Homestead Farms ..	911,520	Special Leases ..	47,199
Conditional Purchases ..	7,190,093	Leases of Reserves ..	2,296,300
Selections from the late W.A. Company	5,297	Residential Lots ..	72
Selections under the Agricultural Lands Purchase Act	562,974	(ii) Issued by Mines Department—	
Special Occupation Leases and Licences ..	300	Gold-mining Leases ..	6,078
Homestead or Grazing Leases	13,056,178	Mineral Leases ..	47,137
Poison Land Leases or Licences	23,251	Miners' Homestead Leases ..	31,472
Village Allotments ..	93	(iii) Issued by Forests Department—	
Working-men's Blocks ..		Timber Leases and Concessions ..	397,222
		Timber Permits ..	1,172,438
Total	21,804,506	Total	243,724,065
		4. <i>Area Unoccupied</i>	345,465,975

Total area of State—624,588,800 acres.

7. Tasmania.—At the end of the year 1928, 33.8 per cent. of the total area had been alienated absolutely ; 3.5 per cent. was in process of alienation ; 26.0 per cent. was occupied under leases and licences for either pastoral, agricultural, timber, or mining purposes, or for closer or soldier settlement, or occupied or reserved by the Crown ; the remainder (36.7 per cent.) was unoccupied.

The following table shows the distribution :—

ALIENATION AND OCCUPATION OF CROWN LANDS.—TASMANIA, 1928.

Particulars.	Acres.	Particulars.	Acres.
1. <i>Alienated Absolutely</i>	5,662,595	3. <i>Leases and Licences</i> —continued.	
		(ii) <i>Issued by Mines Department</i>	46,600
2. <i>In Process of Alienation</i>	587,656	(iii) <i>Occupied by Commonwealth and State Departments</i> ..	18,100
3. <i>Leases or Licences</i> —		(iv) <i>Reserved for Public Purposes</i>	1,500,000
(i) <i>Issued by Lands Department</i> —			
Islands	112,000		
Ordinary Leased Land	2,055,049		
Land Leased for Timber	273,100	Total	4,369,479
Closer Settlement	84,000		
Soldier Settlement	176,630		
Other Leases	104,000	4. <i>Area Unoccupied</i>	6,158,270

Total area of State—16,778,000 acres.

8. *North Australia and Central Australia.*—(i) *North Australia.* The area of North Australia is 183,715,840 acres, of which, at the end of 1929, only 0.26 per cent. was alienated absolutely; 54.65 per cent. was held under leases and licences; while the remaining 45.09 per cent. was unoccupied.

(ii) *Central Australia.* Of the total area of Central Australia, viz., 151,400,960 acres, only 11 acres were alienated absolutely, while of the remainder, 32.04 per cent. was held under leases and licences.

(iii) *Distribution of Tenures.* The following shows the mode of occupancy of areas at the end of 1929 :—

ALIENATION AND OCCUPATION OF CROWN LANDS.—NORTH AND CENTRAL AUSTRALIA, 1929.

Particulars.	North Australia.	Central Australia.	Total.
	Acres.	Acres.	Acres.
1. <i>Alienated</i>	477,842	11	477,853
2. <i>Leased</i> —			
Right of purchase			
Pastoral	84,969,760	44,530,560	129,500,320
Other leases and licences	15,426,494	3,978,460	19,404,954
Total	100,396,254	48,509,020	148,905,274
3. <i>Unoccupied (a)</i>	82,841,744	102,891,929	185,733,673
4. <i>Total area</i>	183,715,840	151,400,960	335,116,800

(a) Including Aboriginal and other Reserves, and Mission Stations.

At the end of the year 1929 only 0.14 per cent. was alienated absolutely; 44.44 per cent. was held under leases and licences; while the remaining 55.42 per cent. was unoccupied.

9. *Federal Capital Territory.*—Particulars of the alienation and occupation of Crown lands in the Territory (exclusive of Jervis Bay area) for the year 1929 are as follows :—Alienated 46,968 acres; in process of alienation 60,844 acres; leased 288,919 acres; and unoccupied 179,269 acres. The area of acquired lands was 213,830 acres. The total area of the Territory (exclusive of Jervis Bay area, 17,920 acres) is 576,000 acres.

Alienated land comprised in 1929 8.1 per cent. of the total area, land in process of alienation 10.6 per cent., and land held under lease 50.2 per cent. of the total area.

§ 12. Classification of Alienated Holdings According to Size.

1. **General.**—The classification of private holdings according to their area is of interest chiefly in relation to the efforts made by the several States in recent years to promote settlement on the land on blocks of suitable size, especially by means of the Closer Settlement Acts.

The following table gives particulars of the number and areas of private holdings of alienated land and land in process of alienation at the latest date for which the information has been compiled:—

CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1928-29.

Size of Holdings.	N.S.W. (a)	Victoria.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Total. (b)
NUMBER.							
1 and under 50 acres	14,190	19,791	6,202	4,812	3,164	3	48,162
50 " 100 "	7,527	8,388	1,776	874	2,108	1	20,674
100 " 500 "	25,719	25,979	5,907	3,093	4,779	19	65,496
500 " 1,000 "	11,394	12,440	4,570	3,204	726	18	32,361
1,000 " 5,000 "	10,948	6,929	4,632	7,768	775	15	31,067
5,000 " 10,000 "	1,255	297	133	440	146	3	2,274
10,000 " 20,000 "	524	90	38	116	67	1	831
20,000 " 50,000 "	214	15	8	23	29	..	289
50,000 and over ..	59	..	..	7	5	..	71
Total ..	71,830	78,988	23,261	20,337	11,799	60	201,225
AREA.							
1 and under 50 acres	322,082	374,677	113,921	63,130	58,351	91	932,252
50 " 100 "	534,269	601,533	143,072	72,327	147,259	65	1,549,025
100 " 500 "	6,739,650	6,384,766	1,745,181	746,982	1,095,434	5,267	16,717,280
500 " 1,000 "	8,056,717	8,828,038	3,409,573	2,756,642	593,506	12,778	23,657,254
1,000 " 5,000 "	21,865,217	11,558,819	8,277,929	16,394,494	1,600,262	30,050	60,026,815
5,000 " 10,000 "	8,537,465	2,047,281	912,394	3,003,200	1,017,754	21,354	15,589,468
10,000 " 20,000 "	7,240,069	1,196,469	457,244	1,588,720	924,784	12,600	11,419,886
20,000 " 50,000 "	6,374,610	390,876	188,305	617,972	812,306	..	8,384,066
50,000 and over ..	5,337,288	..	..	519,326	383,633	..	6,240,247
Total ..	65,107,431	31,682,459	15,247,619	25,763,293	6,633,289	82,205	144,516,296

(a) Year 1924-25. (b) No data have been tabulated for Queensland and the Northern Territory.

§ 13. Present Position of Land Settlement.

1. **Condition of Public Estate.**—The position in regard to land settlement in each State and Territory and in Australia as a whole in 1928 is shown in the table hereunder.

During the past ten years, the area alienated absolutely in the whole of Australia increased by 12,214,750 acres, and that in process of alienation by 8,286,805 acres, or a total of 20,501,555 acres during the decade, while the area leased advanced from 883,494,701 acres in 1918 to 953,689,982 acres in 1928.

AREAS ALIENATED, IN PROCESS OF ALIENATION, HELD UNDER LEASE OR LICENCE, AND UNOCCUPIED, 1928.

Year.	Alienated.		In Process of Alienation.		Held under Lease or Licence.		Occupied by the Crown or Unoccupied.	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
NEW SOUTH WALES (a).—AREA, 198,036,500 ACRES.								
1928 ^e	643,184,163	21.81	23,257,608	11.74	115,432,624	58.29	16,158,885	8.16
VICTORIA.—AREA, 56,245,760 ACRES.								
1928	26,017,176	46.26	9,452,223	16.80	8,037,604	14.29	12,738,757	22.65
QUEENSLAND.—AREA, 429,120,000 ACRES.								
1928	18,171,909	4.23	6,307,783	1.47	315,391,556	73.50	89,248,752	20.80
SOUTH AUSTRALIA.—AREA, 243,244,800 ACRES.								
1928	11,903,980	4.89	3,768,825	1.55	119,423,793	49.10	108,148,202	44.46
WESTERN AUSTRALIA (a).—AREA, 624,588,800 ACRES.								
1928	12,788,968	2.05	20,533,255	3.29	237,428,424	38.01	353,838,153	56.65
TASMANIA.—AREA, 16,778,000 ACRES.								
1928	5,662,595	33.75	587,656	3.50	4,369,479	26.04	6,158,270	36.71
NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.								
1928	477,835	0.14	..	..	153,318,400	45.75	181,320,565	54.11
FEDERAL CAPITAL TERRITORY.—AREA, 601,580 ACRES.								
1928 ^c	45,526	7.80	52,033	8.92	288,102	49.36	197,999	33.92
AUSTRALIA.—AREA, 1,903,732,240 ACRES.								
1928 ^d	118,252,152	6.21	63,959,383	3.36	953,689,982	50.10	767,809,583	40.33

(a) To 30th June.

(b) Excludes lands alienated but subsequently resumed or reverted to the Crown.

(c) Excludes Jervis Bay area, 17,920 acres.

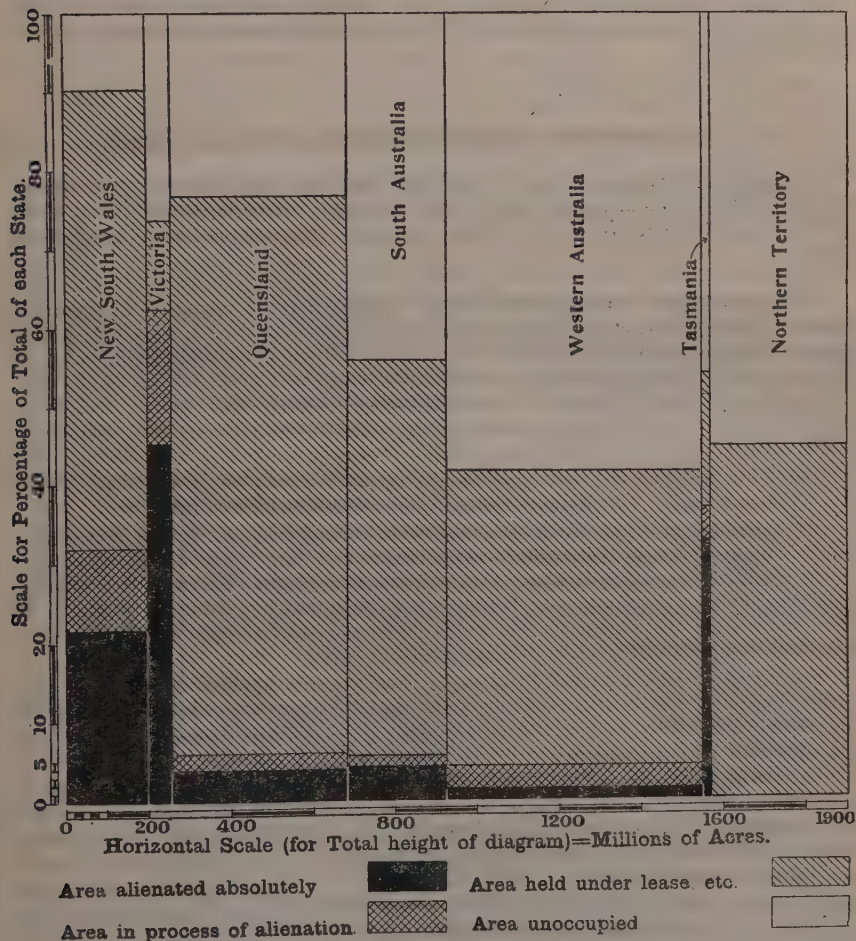
(d) Excludes Lord Howe Island, 3,220 acres,

and Jervis Bay area, 17,920 acres.

(e) Excludes Lord Howe Island, 3,220 acres.

2. Diagram showing Condition of Public Estate.—The following diagram shows the condition of the public estate at the end of the year 1926. The square itself represents the total area of Australia, while the relative areas of individual States are shown by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of deferred payments, and the areas held under leases or licences, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded. There have been some changes since this diagram was drawn, but they do not materially affect the correctness of presentation of the various features.

Land Tenure.



CHAPTER VI.

TRADE.

§ 1. Introductory.

1. **Constitutional Powers of the Commonwealth in regard to Commerce.**—The powers vested in the Commonwealth Parliament by the Commonwealth Constitution Act with respect to overseas trade and commerce will be found in Sub-section 51 (i) and Sections 86 to 95 of the Act.

§ 2. Commonwealth Legislation affecting Oversea Trade.

1. **General.**—In previous issues of the Year Book brief particulars of the various Commonwealth Acts and amendments thereof affecting overseas trade have been given in chronological order. It is not proposed to repeat this information in the present issue.

2. **Customs Tariff 1921–1930.**—The Tariff Schedule now in operation incorporates Customs Tariff 1921 (Act No. 25 of 1921), Customs Tariff 1922 (Act No. 16 of 1922), Customs Tariff (Sugar) 1922 (Act No. 32 of 1922), Customs Tariff 1923 (Act No. 22 of 1923), Customs Tariff 1924 (Act No. 1 of 1924), Customs Tariff 1926 (Act No. 26 of 1926), Customs Tariff (No. 2) 1926 (Act No. 45 of 1926), Customs Tariff 1928 (Act No. 2 of 1928), Customs Tariff (No. 2) 1928 (No. 35 of 1928), Customs Tariff (No. 3) 1928 (No. 36 of 1928), and Customs Tariff 1930 (No. 3 of 1930).

The Tariff Schedule provides a British Preferential Tariff, an Intermediate Tariff, and a General Tariff. The main provisions of the Act are mentioned hereunder.

The rates of duty set out in the Schedule in the column headed "British Preferential Tariff" apply to goods the produce or manufacture of the United Kingdom, subject to the condition that the goods have been shipped in the United Kingdom to Australia, and have not been transhipped, or, if transhipped, then only if it is proved satisfactorily that the intended destination of the goods, when originally shipped from the United Kingdom, was Australia (Section 8 of Act No. 25 of 1921.)

The provisions of the British Preferential Tariff may be applied wholly or in part to any portion of the British Dominions, and the provisions of the Intermediate Tariff may be applied wholly or in part to any portion of the British Dominions or to any foreign country by negotiation.

The rates of duty set out in the column headed "General Tariff" apply to all goods to which the rates set out in either of the columns headed "British Preferential Tariff" or "Intermediate Tariff" do not apply (Act No. 25 of 1921, Section 10). The General Tariff applies to all importations, excepting importations the produce or manufacture of the United Kingdom, shipped in the United Kingdom to Australia, and excepting also goods covered by the Customs Tariff (New Zealand Preference) Acts No. 3 of 1922, No. 36 of 1922, and No. 38 of 1926, the Proclamation relating to Canadian Preference, and the Customs Tariff (Papua and New Guinea Preference) Act No. 6 of 1926.

On the 24th November, 1927, an amending Tariff Schedule was introduced into the House of Representatives. This Schedule embodied a reduction or abolition of some revenue-producing items; a further measure of protection to some Australian industries; and an expansion and extension of preference to British trade. The principal items affected were textiles and metals and machinery. These amendments were ratified by the Customs Tariff Act, 1928 (No. 2 of 1928), and do not affect the operations of the Customs Tariff (New Zealand Preference) Act of 1922–1926, or the Customs Tariff (Papua and New Guinea Preference) Act of 1926.

The Customs Tariff 1921-1928 was amended as from the 23rd August, 1929, by increasing the customs duties payable on ale, spirits, and beverages; tobacco; silk and artificial silk; petroleum; and motor chassis. Certain excise duties were also increased.

On the 22nd November, 1929, another amending schedule to the Customs Tariff 1921-1928 and the Excise Tariff 1921-1928 came into operation. This extensive schedule provided for an increase of import duties under many items, the principal items affected being ale, spirits and beverages; tobacco; agricultural products and groceries; textiles and attire; metals and machinery; petroleum; motor bodies and motor chassis.

On the 11th December, 1929, a further amending schedule came into operation.

The Customs Tariff Act of 1930 amended the schedule so far as the imports of dressed timber n.e.i. are concerned.

A special customs duty of 50 per cent. of the amount of duty already imposed on certain items was introduced as from the 3rd April, 1930.

By proclamation of the 4th April, 1930, the importation of 78 items of goods into the Commonwealth was prohibited; the principal items affected being spirits, cigarettes, manufactured tobacco, batteries, and wireless receiving sets.

3. Preferential Tariffs.—(i) *British Preference.*—The Commonwealth Tariff Act 1908 provided Preferential Tariff rates in favour of goods produced or manufactured in the United Kingdom. Subsequent amendments of the Tariff have extended the list of articles to which the preferential rates apply. This favourable treatment of the United Kingdom was again extended by Customs Tariff 1921 (No. 25 of 1921), and when this Act was incorporated in Customs Tariff 1921-1928 further concessions were granted.

On the introduction of the preferential treatment of British goods by the Commonwealth Tariff, it was required that British material or labour should represent not less than one-fourth the value of such goods. From the 1st September, 1911, it was required in regard to goods only partially manufactured in the United Kingdom, that the final process or processes of manufacture should have been performed in the United Kingdom and that the expenditure on material of British production and/or British labour should have been not less than one-fourth of the factory or works cost of the goods in the finished state. These conditions were superseded during the year 1925.

Important alterations in the conditions governing the entry of goods into the Commonwealth under the British Preferential Tariff were made during 1925. The amended conditions have applied to goods invoiced to Australia since the 1st April, 1925.

Under the new conditions Preference is granted in the Commonwealth as follows:—

- (a) To goods which are wholly produced or wholly manufactured in the United Kingdom.

As to manufactured goods, these will only be considered "wholly manufactured in the United Kingdom" if in the raw materials used and in the finished goods no manufacturing process has been performed outside the United Kingdom which is being commercially performed in the United Kingdom.

The Minister shall determine what are to be regarded as raw materials, and in such determination may include partially manufactured Australian materials.

- (b) To goods, not wholly produced or wholly manufactured in the United Kingdom in the terms of paragraph (a), provided they contain at least 75 per cent. of United Kingdom labour and/or material in their factory or works cost.
- (c) Notwithstanding anything contained in the preceding paragraphs, to goods of a class or kind not commercially manufactured in Australia provided they contain at least 25 per cent. of United Kingdom labour and/or material in their factory or works cost.
- (d) It is essential in every case that the final process or processes of manufacture shall take place in the United Kingdom, and that the goods are consigned therefrom direct to Australia.

It is also provided that the conditions of preference set out above shall apply (in addition to goods from the United Kingdom) to goods, claiming preference, shipped from any country to which the Commonwealth of Australia has extended Tariff Preference, whether the rates granted be those of the "British Preferential Tariff," the "Intermediate Tariff," or special rates.

On the basis of the imports during 1913, the preferential provisions of the Tariff of 1908-11 covered 65 per cent. of the imports of merchandise of United Kingdom origin, the margin of preference being equal to 5 per cent. of the value of the goods. On the same basis the Tariff of 1921-28 has extended the application of the Preferential Tariff rates to 95 per cent. of the imports from the United Kingdom, and, at the same time has increased the margin of preference to 13.9 per cent. *ad valorem*. The average equivalent *ad valorem* rate of duty payable under the Tariff of 1921-1928 on goods of United Kingdom origin is about 33 per cent., whereas the same goods under the General Tariff rates would be called upon to pay an average rate of about 48 per cent.

An application of the Tariff of 1921-28 to the imports from the United Kingdom entered for home consumption during the year 1928-29 shows that the value of the goods of United Kingdom origin which participated in the preferential provisions of the Tariff was £52,049,999, upon which duty to the amount of £8,618,712 was collected. Under the General Tariff the same goods would have been required to pay £15,823,123 duty. Thus, had the conditions of the General Tariff operated on these goods, £7,204,411 additional duty would have been paid, representing an average of 13.9 per cent. on the value of the goods. The principal classes which benefited under the Preferential Tariff and the value of preference granted during the year 1928-1929 were textiles, £2,240,976; metals and metal manufactures, £1,747,275; machines and machinery, £854,646; apparel, £378,673; and paper, £376,680.

Of £52,049,999 worth of goods mentioned above, £26,283,841 were "free", while the same goods if they had been imported from other countries would have paid duty to the amount of £3,510,077, representing an average *ad valorem* rate of 13.4 per cent.

The value of goods from countries other than the United Kingdom which were adversely affected by the preferential provisions of the Tariff amounted to £55,318,391, and the duty collected thereon was £17,845,346, or £6,995,825 more than would have been paid under the British Preference Tariff Rates.

(ii) *South African Preference*.—By the Customs Tariff (South African Preference) Act 1906 it was provided that certain goods, specified in the Schedule to that Act, imported from, and the produce or manufacture of, any of the British South African Colonies or Protectorates included in the South African Customs Union, should be admitted to the Commonwealth at preferential rates as compared with the general rates then in force under the Schedule to the Customs Tariff 1902. Section 5 of Customs Tariff (Act No. 26 of 1926) repealed the Customs Tariff (South African Preference) 1906, also Section 15 of the Customs Tariff 1921-24, which provided for a continuance of the South African Preference as set out in the Act of 1906. The repeal came into operation on the first day of July, 1926, and the provisions of the Customs Tariff 1921-30 now apply in relation to goods imported from South Africa and entered for home consumption since that date.

(iii) *New Zealand Preference*.—The Customs Tariff (New Zealand Preference) 1922 (No. 3 of 1922) was assented to on the 23rd August, 1922, and repealed Act No. 27 of 1921. The Act was proclaimed on the 1st September, 1922, and the duties of Customs provided for in the Schedule of the Act came into force on and from that date. The Act provided that the duties of Customs on goods imported direct from, and the produce or manufacture of, the Dominion of New Zealand shall be in accordance with the following rates:—

- (a) On all goods described in the Tariff Schedule against which rates of duty are set out in the column headed "Proposed Duties against New Zealand" the rates so set out.
- (b) On all goods other than those provided for in paragraph (a) the rates of duty for the time being applicable to goods to which the British Preferential Tariff applies.

The Act ratifies and confirms the agreement made on the 11th April, 1922, between the Commonwealth of Australia and the Dominion of New Zealand, and provides that, from and after the 1st May, 1922, duties of Customs on goods not being the produce or manufacture of New Zealand which are imported into the Commonwealth from that Dominion and upon which, if they had been imported into the Commonwealth direct from the country of origin, there would have been payable duties of Customs at the rates set out in the British Preferential Tariff, shall be in accordance with the rates set forth in that particular tariff.

The Customs Tariff (New Zealand Preference, No. 2) Act No. 36 of 1922, assented to on 18th October, 1922, relates to the rates of duty on certain imports from New Zealand specified in the Schedule to the Act. The goods specified are—Meats, preserved in tins or other airtight vessels; sheets and roofing slates composed of cement and asbestos or of similar materials; dairying machines and implements, viz.,—curd agitators and curd mixers; and corn (millet) brooms.

New Zealand Re-exports Act 1924 (No. 21 of 1924) assented to on 16th September, 1924, relates to the value for duty of goods not the produce or manufacture of New Zealand, which are imported into Australia from New Zealand.

The Customs Tariff (New Zealand Preference) (No. 38 of 1926) ratifies an agreement made on the 30th April, 1926, between the Commonwealth of Australia and the Dominion of New Zealand relating to preferential duties of Customs. This agreement is supplemental to an agreement under seal made on 11th April, 1922. Clause 2 of the principal agreement is varied further, as set out hereunder:—

“The Commonwealth shall not impose any Customs duty or increase the rate of any Customs duty on any article the produce or manufacture of the Dominion entering the Commonwealth from the Dominion, and the Dominion shall not impose any Customs duty or increase the rate of any Customs duty on any article the produce or manufacture of the Commonwealth entering the Dominion from the Commonwealth (whether such article is or is not specifically enumerated in the Schedule hereto, and whether such article is or is not dutiable at the date of this agreement) except by mutual agreement, until after six calendar months' notice to the other party to this agreement.”

The Customs Tariff (New Zealand Preference) Act 1928 (No. 25 of 1928) provided that, from the 15th June, 1928, the rate of duty payable on butter and cheese produced or manufactured in the Dominion and imported direct from New Zealand would be increased from twopence to sixpence per pound.

(iv) *Papua and New Guinea Preference.*—The Customs Tariff (Papua and New Guinea Preference) 1926 (No. 6 of 1926) was assented to on 15th February, 1926, and relates to Customs Preference on goods the produce of Papua and the Territory of New Guinea. The importation into Australia, direct from Papua or New Guinea, of such of the goods specified in the Schedule to the Act as were produced in the Territory shall, notwithstanding anything contained in the Customs Tariff 1921–1924, be free of duty. The items specified in the Schedule are:—Coffee; fruits, dried, viz., litchi; fruits, fresh, various native fruits; fungi; ginger; rangoon beans; coconuts; and seeds, viz., kapok and sesame.

4. *Reciprocal Tariffs.*—(i) *General.* The Tariff Act of 1921 introduced a new feature into Australian Tariffs in the form of an Intermediate Tariff. In submitting the Schedule to Parliament, the Minister for Trade and Customs made the following statement of the object of the Intermediate Tariff:—“ . . . the Minister is empowered under the Bill to enter into reciprocal arrangements with other Dominions of the British Crown. The Minister will be able, if we can arrange a satisfactory reciprocal agreement, to extend to other Dominions in individual items the British preference rate, or the intermediate rate, or, it may be, the general rate. Such agreements will be subject to the ratification of Parliament. The provision simply means that if any of our sister self-governing Dominions desires to enter into reciprocal trade relationships with us, the Minister, with the British Preference Tariff, the Intermediate Tariff, and the General Tariff before him, may bargain with the sister Dominion and come to an agreement which, as I say, must subsequently be ratified by Parliament. . . . There is a provision of a somewhat similar character in regard to other countries than the Dominions, the only difference being that the Minister is empowered to extend to countries other

than the Dominions only the Intermediate Tariff; that is to say, in entering into such negotiations, he is precluded from offering to those countries what we might term, for the purposes of this Bill, the Empire rate. He is confined in his negotiations with these other countries to the Intermediate Tariff."

(ii) *Union of South Africa.* Until 1922, the Union of South Africa was the only British Dominion with which Australia had a reciprocal Tariff arrangement. The Commonwealth Customs Tariff (South African Preference) Act (No. 17 of 1906) and subsequent amending Acts provided preferential rates of duty to be applied to certain imported goods "when those goods are imported from and are the produce or manufacture of any of the British South African Colonies or Protectorates which are included within the South African Customs Union."

The Customs Tariff (South African Preference) 1906 was repealed by the Customs Tariff 1926. The repeal came into operation on the 1st July, 1926, and thereafter the provisions of the Customs Tariff 1921-1926 applied in relation to goods imported from South Africa which are entered for home consumption after that time.

(iii) *Dominion of New Zealand.* On the 11th April, 1922, an agreement was made between the Commonwealth of Australia and the Dominion of New Zealand whereby goods specified in the schedule attached to the agreement should be admitted at the rates of duty set out in the schedule. In addition to the goods specially mentioned in the schedule, it is provided that "all other goods being the produce or manufacture of Australia or New Zealand shall be dutiable at the rates applicable to goods being the produce or manufacture of the United Kingdom, upon entry into New Zealand or Australia respectively." This agreement was ratified by the Commonwealth Parliament by the Customs Tariff (New Zealand Preference) 1922, and by Proclamation dated 24th August, 1922, came into operation on the 1st September, 1922. A variation of the original agreement was ratified by the Customs Tariff (New Zealand Preference) No. 38 of 1926, whilst a further amendment of certain rates of duty came into operation from the 15th June, 1928, under the Customs Tariff (New Zealand Preference) Act No. 25 of 1928. In section 2, "Commonwealth Legislation affecting Oversea Trade" of this chapter, the full text of the variation of the agreement is given.

It is estimated that during 1928-29, goods otherwise dutiable and amounting in value to £611,889 were admitted free under the provisions of the Preferential Tariff and the duty thus remitted was £222,650. In addition, goods valued at £232,940, which were dutiable under both general and preferential tariffs, were admitted under the preferential agreement, the duty remitted on such goods being £53,138. The total value of the preference granted on the import of New Zealand goods thus was £275,788, representing a preference of 32.6 per cent. The principal items which benefited under the preferential provisions were undressed timber, valued at £483,375; pork, £76,140; tinned meat, £36,150 and bacon and hams, £22,730; the amount of duty remitted being £196,116, £7,614, £4,304, and £3,323 respectively.

(iv) *Dominion of Canada.* The negotiations for a reciprocal trade treaty between Canada and Australia reached finality during September, 1925, and a reciprocal Tariff agreement between the two countries is now in operation. The commodities on which Canada grants preferential rates of duty to Australia are:—Beeswax, butter, brandy, champagne, cheese, currants, eggs, eucalyptus oil, fruits (dried, fresh, and pulped) fruits in cans, glue, honey, lard, meat (fresh and canned), onions, raisins, sugar, tallow, vegetables in tins, and wine. Australia's preferential duties apply to the following Canadian imports:—Cash registers, corsets, fish, gloves, goloshes and rubber sand boots, etc., iron and steel tubes or pipes, printing machinery, paper (printing, typewriting and writing), typewriters, and vehicles, viz., motor chassis (unassembled and assembled), and vehicle parts, including undergear, axles, springs, hoods, wheels and bodies.

Imports of Canadian origin entitled to preference were valued in 1928-29 at £3,405,878, the principal items being motor car chassis and vehicle parts £1,789,935, printing paper £982,337, and fish £488,398. £653,999 duty would have been payable under the General Tariff during 1928-29, of which the duty remitted under the preferential agreement amounted to £333,211, being equivalent to 9.8 per cent. on the total imports. Australian exports to Canada subject to preference amounted to £577,578, the principal items being dried fruits, £213,475; sugar, £132,451; and meats, £111,982.

(v) *Papua and New Guinea*.—Customs Tariff (Papua and New Guinea) Preference 1926 provides for Customs Preference on goods the produce of Papua and on goods the produce of the Territory of New Guinea. Imports into Australia, direct from the Territory of Papua or the Territory of New Guinea, of such of the goods specified in the schedule to the Act as were produced in the Territory from which they were imported, shall, notwithstanding anything contained in the Customs Tariff 1921-1924, be free of duty. The goods specified in the schedule are coffee, dried fruit, viz., litchi, fresh fruits (various local fruits), edible fungi, green ginger, coco-nuts and kapok and sesame seeds.

5. *Preferential Tariff of the United Kingdom*.—The post-war Tariff of the United Kingdom provides Preferential Customs rates on certain goods where they are shown to the satisfaction of the Commissioners of Customs and Excise to have been consigned from and grown, produced, or manufactured in the British Empire. Manufactured articles generally are not entitled to the preferential rates unless 25 per cent. of their value is the result of labour within the British Empire. The principal items of interest to Australia which are accorded preferential treatment under the Tariff of the United Kingdom are :—Fruits, dried and preserved; jam; fruit pulp; preserved milk; wine; and brandy.

In the Budget submitted to the House of Commons during June, 1925, clauses dealing with increased Imperial preference on Empire-grown tobacco, preserved and dried fruits, jams and jellies, spirits, wine, sugar, and hops were proposed and adopted. The new rates of duty took effect on 1st July, 1925, excepting that relating to hops, which came into operation on 16th August, 1925. On the basis of the quantities of dried fruits, spirits, wine, sugar, canned fruits and jams and jellies imported into the United Kingdom from Australia during the year 1923, as shown in the Annual Statement of the Trade of the United Kingdom, it is estimated that £947,954 additional duty would have been collected if the same quantities of goods had been dutiable under the rates applicable to imports from foreign countries. The main items receiving preference and the amount of rebate were sugar, £492,212; wine, £347,849; and dried fruits, £102,571.

6. *Tariff Board Act 1921 (No. 21 of 1921)*.—This Act, which was assented to on the 15th December, 1921, as amended by Tariff Board Act 1923 (No. 25 of 1923), provides for the appointment of a Tariff Board consisting of four members, one of whom shall be an administrative officer of the Department of Trade and Customs. This member shall be appointed Chairman of the Board. The purpose of the Tariff Board is to assist the Minister in the administration of matters relating to trade and customs. The more important matters which the Minister shall refer to the Board for enquiry and report include the classification of goods for duty; the determination of the value of goods for duty; any disputes arising out of the interpretation of any Customs or Excise Tariff; the necessity for new, increased or reduced duties; the necessity for granting bonuses; any proposal for the application of the British Preferential Tariff or the Intermediate Tariff to any part of the British Dominions or any foreign country; and any complaint that a manufacturer is taking undue advantage of the protection afforded him by the tariff by charging unnecessarily high prices for his goods or acting in restraint of trade. The Minister may refer to the Board for inquiry and report the following matters :—the general effect of the working of the Customs Tariff and the Excise Tariff; the fiscal and industrial effects of the Customs laws of the Commonwealth, the incidence between the rates of duty on raw materials and on finished or partly finished products; and any other matter affecting the encouragement of primary and secondary industries in relation to the tariff.

7. *Tariff Board Act 1924 (No. 29 of 1924)*.—This Act, which was assented to on 26th September, 1924, amended the Tariff Board Act 1921-23. Section 5 of the Principal Act provided for a Tariff Board consisting of three members. The section was amended by Tariff Board Act (No. 25 of 1923) by omitting the word "three" and inserting in its stead the word "four."

Section 6, sub-section (3), of the principal Act was amended during 1924 (Act No. 29 of 1924) by providing that members of the Board shall be appointed for a term not being less than one year nor more than three years. This amending Act provides that in inquiries conducted by the Board relating to any revision of the Tariff, any proposal

for a bounty, or any complaints that a manufacturer is taking undue advantage of the protection afforded him by the Tariff, shall be held in public and evidence in such inquiries shall be taken in public on oath, unless any witness objects to giving any evidence in public which the Board is satisfied is of a confidential nature, when the Board may take such evidence in private. Evidence taken by the Board in connexion with any inquiry under the Customs Tariff (Industries Preservation) Act 1921-22 shall be taken in public on oath. Section 37 of the Principal Act relating to duration of Act is repealed.

The latest Annual Report of the Tariff Board, issued in accordance with Section 18 (1) of the Tariff Board Act 1921-29, reviews the work of the Board during the year ended 30th June, 1929. During the year the Board furnished 327 reports to the Minister for Trade and Customs as follows:—Requests for admission of goods under by-law, 247; operation of deferred duties, 40; question as to the value of goods for duty purposes, 5; operation of the Customs Tariff (Industries Preservation) Act 1921-22, 6; classification of goods for duty purposes, 2; requests for tariff revision and bounty, 27. The report also deals with the questions of distribution, selling and protecting the interests of consumers.

8. Tariff Board Act 1929 (No. 5 of 1929).—This Act, assented to in March, 1929, amended the Tariff Board Act 1921-24 by making provision whereby an officer of the Department of Trade and Customs may be appointed Chairman of the Board, also for the appointment of two of its members as a committee for making special inquiries.

9. Customs Tariff (Industries Preservation) Act 1921 (No. 28 of 1921).—This Act assented to on the 16th December, 1921, provides that after inquiry and report by the Tariff Board, special duties shall be collected in the following cases when the importation of the goods referred to might be detrimental to an Australian industry:—In the case of goods sold for export to Australia at a price less than the fair market price for home consumption or at a price which is less than a reasonable price, a special dumping duty shall be collected equal to the difference between the price at which the goods were sold and a fair market price. Similar provision is made for goods consigned to Australia for sale. With regard to goods exported to Australia at rates of freight less than the rates prevailing at the time of shipment, there shall be collected a dumping freight duty equal to 5 per cent. of the fair market value of the goods at the time of shipment. Special duties are also imposed in the case of goods imported from countries whose currency is depreciated. Provision is also made for the protection of the trade of the United Kingdom in the Australian market from depreciated foreign currency.

The Act provides that the Minister for Trade and Customs, after inquiry and report by the Tariff Board, may publish a notice in the *Commonwealth Gazette* specifying the goods upon which special rates of duty under this Act shall be charged and collected.

Since the Act came into operation approximately 300 notices have been gazetted, including about 130 which revoked previous gazettals, the majority of the notices being made under Sections 8 and 9 of the Act and relating to commodities from countries with depreciated currency to the detriment of Australian or British industries. Over 50 per cent. of the gazettals relate to goods imported from Germany. Three gazettals affect certain goods imported from all countries, while 2 affect goods from all countries excepting United Kingdom. Separate notices have been issued relating to goods from 17 different countries. The commodities brought under the various sections of the Act exceed 150, and cover a very wide range of goods.

Several amendments of the Act were recommended by the Tariff Board and put into effect by the Customs Tariff (Industries Preservation) Act 1922, assented to on 9th October, 1922.

10. Commerce (Trade Descriptions) Act 1905 (No. 16 of 1905).—This Act was assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906. It gives power to compel the placing of a proper description on certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth. An amending Act passed in 1926 added brushware to the original list. The goods to which a trade description must be applied are:—(a) Articles used for food or drink by man, or used in the manufacture or preparation of articles used for

food or drink by man; (b) medicines or medicinal preparations for internal or external use; (c) manures; (d) apparel (including boots and shoes), and the materials from which apparel is manufactured; (e) jewellery; (f) agricultural seeds and plants; and (g) brushware.

11. Acts Passed in 1929.—The following Acts relating to Australian production and trade were assented to during the year 1929 :—

Tariff Board Act (No. 5 of 1929). An Act amending the *Tariff Board Act 1921–1924* with respect to the appointment of chairman, remuneration of members and appointment of committees.

Wine Overseas Marketing Act (No. 6 of 1929.) An Act providing for the appointment of a Wine Overseas Marketing Board to control the export, sale and distribution after export of Australian wine.

Wine Grapes Charges Act (No. 7 of 1929). An Act imposing charges upon grapes intended for use in the manufacture of wine.

Dried Fruits Exports Charges Act (No. 12 of 1929). An Act amending the *Dried Fruits Export Charges Act 1924–1927.*

Dairy Produce Export Charges Act (No. 15 of 1929). An Act amending the *Dairy Produce Export Charges Act 1924.*

Canned Fruits Export Charges Act (No. 16 of 1929). An Act amending the *Canned Fruits Export Charges Act 1926.*

Customs Tariff Validation Act (No. 21 of 1929). An Act providing for the validation of collections of Customs Duties under Tariff proposals introduced into the House of Representatives on the 22nd August, 1929.

Excise Tariff Validation Act (No. 22 of 1929). An Act providing for the validation of collections of Excise Duties under Tariff proposals introduced on the 22nd August, 1929.

Wine Grapes Charges (No. 2) Act (No. 27 of 1929). An Act amending the *Wine Grapes Charges Act 1929.*

Iron and Steel Products Bounty Act (No. 32 of 1929). An Act amending the *Iron and Steel Products' Bounty Act 1922–1927.*

§ 3. Method of Recording Imports and Exports.

1. Value of Imports.—The recorded value of goods imported from countries beyond Australia as shown in the following tables represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods is taken to be 10 per cent. in advance of their fair market value in the principal markets of the country whence the goods were exported. Acting upon a recommendation of the Tariff Board the section of the Customs Act relating to the valuation of imports was amended, and Section 154 (1) of the Customs Act 1901–1925 now provides that “when any duty is imposed according to value, the value for duty shall be the sum of the following :—

- (a) (i) the actual money price paid or to be paid for the goods by the Australian importer plus any special deduction, or
- (ii) the current domestic value of the goods, whichever is the higher ;
- (b) all charges payable or ordinarily payable for placing the goods free on board at the port of export ; and
- (c) ten per centum of the amounts specified under paragraphs (a) and (b) of this sub-section.

“Current domestic value” is defined as “the amount for which the seller of the goods to the purchaser in Australia is selling or would be prepared to sell for cash, at the date of exportation of those goods, the same quantity of identically similar goods to any and every purchaser in the country of export for consumption in that country.”

Section 157 of the Customs Act provides that when the invoice value of imported goods is shown in any currency other than British currency, the equivalent value in British currency shall be ascertained according to a fair rate of exchange. Under this section it was the practice of the Department of Trade and Customs, until the 8th December, 1920, to convert on the basis of the mint par of exchange. Since the date mentioned, in consequence of a ruling of the High Court, all conversions have been based on the commercial rates of exchange.

2. Value of Exports.—Prior to the 1st July, 1929, the recorded value of all goods exported was taken as representing the value in the principal markets of the Commonwealth in the ordinary commercial acceptance of the term. Owing to the inflated values arbitrarily allotted in recent years to commodities which are subject to governmental control or subsidy, some change in the practice of valuation of exports of such commodities became desirable. Accordingly a new basis was adopted as from the 1st July, 1929, for the statistical valuation of exports of sugar, butter and goods on which bounty or rebate is paid which will show for—(a) *Sugar*—the value f.o.b. at which sold to overseas buyers or an f.o.b. value equal to the London market price if shipped on consignment; (b) *Butter*—the current market value less the amount paid as export bonus; (c) *Goods on which bounty or rebate is paid on export*—the value in the principal markets of the Commonwealth in the ordinary commercial acceptance of the term, not including the value of any bounty or rebate.

3. Customs Area.—The Customs Area, to which all oversea trade statistics issued by this Bureau apply, is the whole area of the Commonwealth of Australia, comprising the States of New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania and the Northern Territory (contiguous territory). Other (non-contiguous) territories and mandated areas are treated as outside countries. Trade transactions between the Commonwealth and these non-contiguous territories are included in the oversea trade of the Commonwealth. Such transactions, however, are also registered separately, i.e., the trade of the Commonwealth with each particular country is separately recorded and tabulated.

4. Statistical Classification of Imports and Exports.—The Oversea Trade Bulletin No. 26 for the year 1928–29, from which the summary figures in this Year Book are extracted, was compiled according to a revised classification which came into operation on 1st July, 1922. In order to meet the demand for more detailed information relating to Imports and Exports the existing statistical classification was revised and considerably extended during the early part of 1922. The new classification is divided into 21 classes, with 1,569 separate import items and 519 export items.

5. The Trade Year.—From the 1st July, 1914, the statistics relating to Oversea Trade are shown according to the fiscal year (July to June). Prior to that date the figures related to the calendar year.

6. Records of Past Years.—In the years preceding federation, each State independently recorded its trade, and in so doing did not distinguish other Australian States from foreign countries. As the aggregation of the records of the several States is necessarily the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports and exports were not on uniform lines. The figures in the following table for years prior to federation have been carefully compiled and may be taken as representative of the oversea trade of Australia as a whole. On the introduction of the Customs Act 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Prior to 1905 the value of ships imported or exported was not included in the returns of trade.

7. *Ships' Stores.*—Prior to 1906 goods shipped in Australian ports on board oversea vessels as ships' stores were included in the general exports. From 1906, ships' stores have been specially recorded as such, and omitted from the return of exports. A table showing the value of these stores shipped each year since 1906 is given later in this Chapter.

§ 4. Oversea Trade.

1. *Total Oversea Trade.*—(i) *General.* The following table shows the total trade of the Commonwealth with oversea countries from the earliest date for which records are available. To economize space, the period 1826 to 1920–21 has been divided into quinquennia, and the figures shown represent the annual averages for the quinquennia specified. The figures for individual years have been published in previous issues of the Year Book.

OVERSEA TRADE.—AUSTRALIA, 1826 TO 1928–29.

Period (a).	Recorded Value.			Value per Inhabitant.			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1826 to 30	638	153	791	10 12 5	2 10 11	13 3 4	23.9
1831 „ 35	1,144	613	1,757	11 19 10	6 8 6	18 8 4	53.6
1836 „ 40	2,283	1,112	3,395	14 15 9	7 4 1	21 19 10	48.7
1841 „ 45	1,906	1,378	3,284	9 0 5	6 10 5	15 10 10	72.3
1846 „ 50	2,379	2,264	4,643	6 18 10	6 12 2	13 11 0	95.2
1851 „ 55	11,931	11,414	23,345	19 12 5	18 15 4	38 7 9	95.7
1856 „ 60	18,816	16,019	34,835	18 6 1	15 11 8	33 17 9	85.1
1861 „ 65	20,132	18,699	38,831	15 17 1	14 14 9	30 11 10	93.0
1866 „ 70	18,691	19,417	38,108	12 7 4	12 16 11	25 4 3	103.9
1871 „ 75	21,982	24,247	46,229	12 7 2	13 13 6	26 0 8	110.3
1876 „ 80	24,622	23,772	48,394	11 19 7	11 10 9	23 10 4	96.6
1881 „ 85	34,895	28,055	62,950	14 4 3	11 9 5	25 13 8	80.4
1886 „ 90	34,675	26,579	61,254	11 16 11	9 1 0	20 17 11	76.6
1891 „ 95	27,335	33,683	61,018	8 5 2	10 2 5	18 7 7	123.2
1896 „ 1900	33,763	41,094	74,857	9 5 4	11 5 6	20 10 10	121.7
1901 „ 5	39,258	51,237	90,495	10 1 10	13 2 9	23 4 7	130.5
1906 „ 10	51,508	69,336 ^(b)	120,844	12 4 8	16 9 11	28 14 7	134.6
1911 „ 15–16	73,411	74,504	147,915	15 7 4	15 12 10	31 0 2	101.5
1916–17 to 1920–21	100,735	115,066	215,801	19 7 9	22 2 10	41 10 7	114.2
1921–22 ..	103,066	127,847	230,913	18 14 1	23 4 1	41 18 2	124.0
1922–23 ..	131,758	117,870	249,628	23 7 8	20 18 4	44 6 0	89.5
1923–24 ..	140,618	119,487	260,105	24 9 1	20 15 8	45 4 9	85.0
1924–25 ..	157,143	162,030	319,173	26 15 1	27 11 9	54 6 10	103.1
1925–26 ..	151,638	148,772	300,410	25 6 2	24 16 6	50 2 8	98.0
1926–27 ..	164,717	145,140	309,857	26 19 1	23 15 0	50 14 1	88.1
1927–28 ..	147,945	143,213	291,158	23 14 7	22 19 5	46 14 0	96.8
1928–29 ..	143,648	144,850	288,498	22 13 4	22 17 2	45 10 6	100.8

(a) The figures given for the years 1826 to 1920–21 represent the annual averages for the quinquennial periods. The trade of the individual years will be found in the Official Year Book No. 21 and earlier issues. From 1916–17 onwards the particulars relate to fiscal years. (b) Prior to 1906 ships' stores were included in the general exports. For value of these goods shipped each year since 1906 see later table.

(ii) *Trade Conditions to 1921-22.* The graphs which accompany this Chapter show the movement of Australian overseas trade from 1855 onwards. In previous issues of the Year Book the fluctuations in such trade have been considered in some detail up to the exceptionally high imports during the year 1920-21.

(iii) *Trade Conditions from 1921-22 onwards.* In 1921-22 the consequent reaction took place and both imports and exports declined. The following year, 1922-23, showed an increase in imports, whilst exports decreased still further. In 1923-24, imports had advanced, but exports were practically the same value as in the previous year. The overseas trade during 1924-25 amounted to £319,173,455, of which £157,143,296 represented imports and £162,030,159 exports. These figures so far as total trade and exports are concerned are the highest recorded, while the figure of imports has been exceeded on two occasions only.

During 1925-26 both imports and exports declined; the total overseas trade showing a decrease of £19 millions compared with the previous year. Exports declined over thirteen millions, due to the reduced quantities of wheat and butter exported. In 1926-27 imports were greater than in any previous year, and exceeded those of 1925-26 by £13,078,416. Exports decreased in value, due mainly to smaller exports of sugar, wool, butter, beef, and zinc.

In 1927-28 the total trade was £18,698,921 less than in 1926-27 and less than either of the two earlier years, due to a decline of £16,771,624 in imports and of £1,927,297 in exports when compared with the corresponding figures for 1926-27. Imports of merchandise showed a large decrease of £17,191,219, owing to reduced imports of motor cars, cotton, linen and silk piece goods, petroleum and rubber. A noticeable feature was the increase in exports of merchandise, which was attributable to increased exports of wool, butter, sugar cane, apples, beef, hides and zinc. The value of imports per head was less than that in any year since 1922-23.

During 1928-29 the total value of overseas trade was £2,659,707 less than that for the previous year, and was equivalent to the lowest rate per head of population experienced during the last five years. Imports declined by £4,297,089, but exports increased by £1,637,382. Exports were £1,202,571 in excess of imports; a similar excess not having occurred since the year 1924-25. Substantial reductions were experienced in imports of textiles, machinery, rubber, leather, wood and apparel. There was a large decrease in exports of wool and apples, but exports of wheat, sugar, flour, butter, and beef were in excess of those for the previous year.

2. Ratio between Exports and Imports.—The foregoing table shows the percentage of exports on imports for each quinquennial period from 1826-30 to 1916-17 to 1920-21 and for each financial year since 1920-21. Prior to the quinquennial period 1891-95 the balance of trade, with two exceptions, due to temporary dislocations, had been on the side of imports, while from that period to 1919-20 the position was reversed. During the period from the 1st July, 1920, to the end of June, 1929, there has been an excess of imports, though the results for each year have not been consistently in that direction, as exports were in excess in the years 1921-22, 1924-25, and 1928-29.

The following table presents the balance of trade of Australia as shown by the records of imports and exports for each year since 1st July, 1914, also the modifications of these figures by loans raised abroad by the Commonwealth and State Governments. In the exceptional circumstances arising from the war the excess of exports during this period is somewhat understated, as much of the wool exported appeared in the records at appraised rates, whereas sales effected later by the British Australian Wool Realization Association (B.A.W.R.A.) made considerable additions to the funds available in London on Australian account. Allowance has been made in the table for this increased value of wool exported. An approximation of Australia's annual liability for interest and services is also shown; any error in these figures will be in the direction of an understatement.

The Associated Banks of Australia at the 31st March, 1930, were selling telegraphic transfers on London at a premium of £6½ per £100, whereas in 1921 similar accommodation was costing fifty shillings per £100. There are, however, alleviating factors of considerable dimensions which might modify the results given in the table. Among these probable influences are:—Stocks of wheat still unshipped and imports of private capital. Unfortunately, there is no information regarding the imports of private capital, but there is reason to believe that as a result of the protective tariff there has been a considerable importation of capital during recent years for which no immediate export is required.

BALANCE OF AUSTRALIAN TRADE FROM 1st JULY, 1914, TO JUNE, 1929.

Year.	Recorded excess of Exports.	Increase in Public Debt (Commonwealth and State) raised abroad.	B.A.W.R.A. Dividends.	Total of Columns (2), (3), and (4).	Approximate annual obligations abroad for interest and services.	Addition to Funds available abroad for transmission to Australia.	
						For the Year.	Accumulated from 1st July, 1914.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	£1,000,000	£1,000,000	£1,000,000	£1,000,000	£1,000,000	£1,000,000	£1,000,000
1914-15 ..	- 3.8	6.7	..	2.9	16.0	-13.1	-13.1
1915-16 ..	- 3.0	2.7	..	- 0.3	17.2	-17.5	-30.6
1916-17 ..	21.7	18.4	..	40.1	18.4	21.7	- 8.9
1917-18 ..	19.1	19.4	..	38.5	22.0	16.5	7.6
1918-19 ..	11.6	2.2	..	13.8	22.2	- 8.4	- 0.8
1919-20 ..	50.8	10.8	..	61.6	23.2	38.4	37.6
1920-21 ..	-31.6	13.4	7.7	-10.5	24.3	-34.8	2.8
1921-22 ..	24.8	40.3	9.9	75.0	26.7	48.3	51.1
1922-23 ..	-13.9	7.9	5.9	- 0.1	26.8	-26.9	24.2
1923-24 ..	-21.1	41.6	5.3	25.8	28.5	- 2.7	21.5
1924-25 ..	4.9	2.6	..	7.5	29.5	-22.0	- 0.5
1925-26 ..	- 2.9	40.4	..	37.5	32.0	5.5	5.0
1926-27 ..	-19.6	11.7	..	- 7.9	33.2	-41.1	-36.1
1927-28 ..	- 4.7	54.3	3.9	53.5	35.0	18.5	-17.6
1928-29 ..	1.2	2.1	..	3.3	35.1	-31.8	-49.4
1929-30 ..	-16.1	8.6	..	-7.5	17.6	-25.1	-74.5
(Six months)							
Total ..	17.4	283.1	32.7	333.2	407.7	-74.5	—

The indebtedness of the Commonwealth to the United Kingdom incurred for war purposes during the period 1914-15 to 1917-18 has not been included in the annual increase in Public Debt raised overseas during those years.

3. Value of Imports, Production and Exports.—The following table shows the imports and exports of manufactured goods under certain industrial groups during the year 1927-28 compared with the value of the output of factories engaged in corresponding industries in Australia during the same year. In addition, particulars are given concerning the total imports and exports of all commodities, including both manufactured goods and unmanufactured material, and the total Australian production. The balance shown as not exported represents the value of goods which were used mainly for local consumption or carried over into the next year for shipment overseas or otherwise. The basis of valuation of imports is that assessed for duty purposes; in the case of exports it is the value in the principal Australian markets; and for production either the factory cost of the manufactured goods, the export value or wholesale price of the raw material.

VALUE OF IMPORTS, PRODUCTION, AND EXPORTS—AUSTRALIA, 1927-28.

Industrial Group.	Imports.	Value of Australian Production.	Total.	Exports.	Balance not exported.
	£	£	£	£	£
Foodstuffs of Animal Origin ..	2,755,067	37,163,112	39,918,179	13,168,879	26,749,300
Foodstuffs of Vegetable Origin ..	4,700,575	54,459,772	59,160,347	10,620,361	48,539,986
Spirituuous and Alcoholic Liquors ..	1,767,407	8,813,616	10,581,113	1,173,248	9,407,865
Tobacco and preparations thereof ..	792,218	6,817,391	7,609,609	483,369	7,126,240
Apparel, Textiles and Manufactured Fibres—					
Apparel	5,878,498	40,268,558	46,147,056	163,952	45,983,104
Textiles	27,615,491	9,629,108	37,244,599	125,398	37,119,201
Manufactured Fibres	5,256,162	945,397	6,201,559	67,393	6,134,166
Oils, Fats and Waxes	9,880,884	1,579,355	11,460,239	312,215	11,148,024
Paints and Varnishes	778,663	2,039,634	2,818,297	43,276	2,775,021
Stones and Minerals	153,043	2,264,575	2,417,618	78,938	2,338,680
Metals, Metal Manufactures and Machinery—					
Machines and Machinery	23,261,532	32,976,302	56,237,834	683,498	55,554,336
Metals	17,921,156	24,598,919	42,520,075	423,485	42,096,590
Rubber and Leather	3,382,718	14,324,096	17,706,814	698,182	17,008,632
Wood and Wicker	2,144,551	27,735,030	29,879,581	1,266,234	28,613,347
Earthenware, Cements, China, Glass and Glassware	2,322,312	7,457,349	9,779,661	125,963	9,653,698
Paper and Stationery—					
Paper	5,261,316	3,856,614	9,117,930	26,344	9,091,586
Stationery	2,425,228	17,324,368	19,749,596	239,407	19,510,189
Jewellery, Timepieces and Fancy Goods	1,921,546	898,129	2,819,675	19,973	2,799,702
Optical, Surgical and Scientific Instruments	1,374,405	381,351	1,755,756	274,055	1,481,701
Drugs, Chemicals and Fertilizers	4,009,558	8,633,690	12,643,248	485,370	12,157,878
Miscellaneous	4,580,547	15,636,622	20,167,169	829,289	19,337,880
Total of above manufactured goods	128,132,967	317,802,988	445,935,955	31,308,829	414,627,126
All other items (manufactured and unmanufactured)	19,812,003	135,508,012	155,320,015	111,904,241	43,415,774
Grand Total	147,944,970	453,311,000	601,255,970	143,213,070	458,042,900

The import figure of £19,812,003 for all other items consists mainly of raw materials. The production total of £135,508,012 for other items comprises raw materials, processes, and also manufactured items of which there are no imports, whilst the export total of £111,904,241 for the same group consists of raw materials.

§ 5. Direction of Oversea Trade.

1. Imports according to Country of Origin.—The following table shows the value of the imports into Australia stated to be the produce or manufacture of the undermentioned countries during the past five years :—

AUSTRALIAN IMPORTS.—COUNTRIES OF ORIGIN, 1924-25 TO 1928-29.

Country of Origin.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
United Kingdom	69,047,807	65,840,655	67,795,177	63,098,037	57,028,238
British Possessions—					
Canada	3,384,712	3,754,425	4,324,421	3,278,269	4,871,643
Ceylon	1,587,738	1,614,084	2,153,219	1,931,770	1,966,171
India	6,423,364	6,626,036	6,661,408	5,559,036	6,052,506
Malaya (British)	612,314	1,701,508	2,025,757	1,804,602	1,133,963
New Zealand	2,196,566	2,651,062	3,123,038	3,306,143	2,202,580
Pacific Islands—					
Nauru	391,954	351,696	429,973	342,169	516,544
Territory of New Guinea	261,032	345,603	627,403	561,631	526,235
Other Islands	767,775	769,137	890,075	845,218	848,640
Papua	285,199	348,210	242,939	181,470	117,962
South African Union	5,197,215	897,306	927,993	652,283	586,879
Other British Possessions	527,017	731,520	754,451	904,745	639,831
Total British Possessions ..	21,644,886	19,786,587	22,160,677	19,317,336	19,463,004
Total British Countries ..	90,692,693	85,627,242	89,955,854	82,415,373	76,491,242
Foreign Countries—					
Belgium	901,324	850,276	941,954	936,804	910,797
China	751,960	691,751	785,068	685,518	683,217
France	4,216,457	3,758,740	4,767,163	3,877,113	3,700,303
Germany	2,259,691	2,821,789	4,359,514	4,621,469	4,545,501
Italy	1,506,383	1,446,618	1,564,843	1,362,061	1,449,629
Japan	4,146,234	4,372,083	5,183,470	4,282,614	4,707,299
Netherlands	705,880	818,786	1,092,242	972,633	1,145,378
Netherlands East Indies	5,040,881	6,191,895	6,451,688	5,703,345	7,091,619
Norway	1,458,112	1,106,234	1,055,020	925,867	890,414
Pacific Islands	127,402	129,028	157,720	173,802	220,174
Philippine Islands	249,163	511,457	215,176	208,547	163,030
Sweden	1,638,004	1,871,123	1,847,290	1,873,877	1,480,808
Switzerland	2,327,565	1,997,768	2,458,810	2,117,676	1,969,079
United States of America	38,728,814	37,234,257	41,394,277	35,005,736	35,308,345
Other Foreign Countries	1,792,728	2,409,131	2,486,505	2,782,535	2,941,046
Total Foreign Countries ..	66,450,603	66,010,936	74,760,740	65,529,597	67,156,639
Total	157,143,296	151,638,178	164,716,594	147,944,970	143,647,881

Imports increased abnormally during 1920-21, when the value reached the exceptionally large figure of 164 millions. The enhanced price of commodities and the peculiar conditions affecting Australian trade were responsible for the high value of imports during that year, and in making comparisons with imports during pre-war years, these facts should be taken into consideration. The exceptional conditions affecting Australian trade during 1920-21 have already been mentioned in a previous paragraph.

The total value of the commodities imported during 1921-22 was 60 millions less than in 1920-21, but in the following year there was an increase of 28 millions, and a further increase of 9 millions in 1923-24. The heavy importation of goods continued and the value of imports during 1924-25 reached the high figure of 157 millions, which has been exceeded in 1920-21 and 1926-27 only. During 1925-26 imports declined by $5\frac{1}{2}$ millions, but in the year 1926-27 they amounted to £164,716,594, and exceeded those of any previous year. A decline of 17 millions was experienced in 1927-28, and there was a further reduction in imports to 143 millions in 1928-29; the total value of imports being the lowest recorded for four years.

In view of the effect that the varying prices of commodities had upon the value of imports during the period dealt with, it is somewhat difficult to ascertain from the preceding table the relative importance of the various countries in the import trade of Australia. A better idea of the proportion of imports supplied by each country during each year may be obtained from the following table of percentages.

2. Percentage of Imports from Various Countries.—The following table gives the relative proportions of the import trade of Australia which have been supplied by the British Possessions and foreign countries respectively.

**AUSTRALIAN IMPORTS.—PERCENTAGES FROM COUNTRIES OF ORIGIN,
1924-25 TO 1928-29.**

Country of Origin.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	43.93	43.42	41.16	42.65	39.70
British Possessions—					
Canada	2.15	2.48	2.62	2.22	3.39
Ceylon	1.01	1.07	1.31	1.31	1.37
India	4.09	4.37	4.04	3.76	4.21
Malaya (British)	0.39	1.12	1.23	1.22	0.79
New Zealand	1.40	1.75	1.90	2.23	1.53
Pacific Islands—					
Nauru	0.25	0.23	0.26	0.23	0.36
Territory of New Guinea	0.17	0.23	0.39	0.38	0.37
Other Islands	0.49	0.50	0.54	0.57	0.59
Papua	0.19	0.23	0.14	0.09	0.08
South African Union	3.31	0.59	0.56	0.44	0.41
Other British Possessions	0.33	0.48	0.46	0.61	0.45
Total British Possessions ..	13.78	13.05	13.45	13.06	13.55
Total British Countries ..	57.71	56.47	54.61	55.71	53.25
Foreign Countries—					
Belgium	0.57	0.56	0.57	0.63	0.63
China	0.48	0.46	0.48	0.46	0.44
France	2.68	2.48	2.89	2.62	2.58
Germany	1.44	1.86	2.65	3.12	3.16
Italy	0.96	0.95	0.95	0.92	1.01
Japan	2.64	2.88	3.15	2.89	3.28
Netherlands	0.45	0.54	0.66	0.66	0.80
Netherlands East Indies	3.59	4.08	3.92	3.86	4.94
Norway	0.93	0.73	0.64	0.63	0.62
Pacific Islands	0.08	0.09	0.10	0.12	0.15
Philippine Islands	0.16	0.21	0.13	0.14	0.11
Sweden	1.04	1.23	1.12	1.27	1.03
Switzerland	1.48	1.32	1.49	1.43	1.37
United States of America	24.65	24.55	25.13	23.66	24.58
Other Foreign Countries	1.14	1.59	1.51	1.88	2.05
Total Foreign Countries ..	42.29	43.53	45.39	44.29	46.75
Total	100	100	100	100	100

The percentage of imports from the United Kingdom declined during the first three years of the quinquennial period under review, with a slight recovery in 1927-28, and a further substantial decrease in 1928-29, the proportion decreasing from 43.93 per cent. in 1924-25 to 39.70 per cent. in 1928-29. The most noticeable decline in the percentage of imports therefrom occurred, however, in 1923-24, when a decrease of 6.66 per cent. compared with 1922-23 was experienced. Whilst the proportion of imports from the United Kingdom declined, that from the United States was practically stationary during the first three years of the period under review with a reduction in 1927-28 corresponding to the increase in imports from the United Kingdom and a slight recovery in 1928-29. The value of imports from the United States was £35,308,345 during 1928-29, as compared with £41,394,277 during 1926-27. The corresponding figures for the United Kingdom were £67,795,177 in 1926-27 and £57,028,238 in 1928-29. It is of interest to note however, that imports from the United States included gold specie and bullion valued at £5,628,334 during 1924-25 and only £1,004 during 1928-29. The relatively large proportion of imports supplied by the South African Union during 1924-25 was due to imports of gold valued at £4,725,342. Imports from Canada increased from £3,278,269 in 1927-28 to £4,871,643 in 1928-29, and those from Netherlands East Indies also showed an appreciable increase from £5,703,345 to £7,091,619 during the same period. There

have been no outstanding alterations in the proportions of the imports supplied by other countries. Comparing the proportion of imports supplied by the United Kingdom during 1928-29 with that for 1924-25 it will be seen that there was a reduction of 4.23 per cent., whilst trade with British Possessions declined 0.23 and trade with foreign countries correspondingly increased 4.46 per cent. The table on page 117 shows that, while imports from the United Kingdom decreased by £6,069,799 in 1928-29, trade with foreign countries increased to the extent of £1,627,042.

3. **Direction of Exports.**—The following tables show a decreasing proportion of Australian exports to the United Kingdom during the years 1925-26 and 1926-27 and a partial recovery in the two subsequent years. There was also a steady decline in the proportion exported to France, Italy, Norway and Spain. Exports to Belgium, Germany and Japan, although considerable, also declined during 1928-29. A noticeable feature is the volume of exports to India during that year. This increase of over £6,000,000 in the exports to India in 1928-29 was due solely to exceptionally heavy shipments of wheat. Exports to China, Egypt and Pacific Islands showed an appreciable increase in 1928-29, the items comprised being mainly wheat and flour. Exports to the United States rapidly increased during the years 1925-26 and 1927-28, but have more speedily declined in the two subsequent years; the proportion being 12.82 per cent. in 1926-27 and 4.03 per cent. in 1928-29. The value of imports from United States generally exceeds the value of exports from Australia to that country, but the difference has been very marked during recent years, the value of imports from United States in 1928-29 being no less than 29 millions in excess of the value of the Australian exports. Exports to Canada increased steadily during the period 1923-24 to 1926-27, the proportions rising from 0.20 per cent. in 1923-24 to 0.81 per cent. in 1926-27, but there was a substantial decline in the two following years. The export trade with New Zealand has declined steadily since 1924-25. Exports to South Africa in 1928-29 were one-third less than those of the previous year. The following table shows the value of exports from Australia to the more important countries during the five years 1924-25 to 1928-29:—

EXPORTS FROM AUSTRALIA TO VARIOUS COUNTRIES, 1924-25 TO 1928-29.
(INCLUDING BULLION AND SPECIE.)

Country.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
United Kingdom	69,147,229	61,547,790	48,351,780	54,279,714	55,172,562
British Possessions—					
Canada	716,953	858,934	1,171,687	856,767	813,992
Ceylon	831,911	506,100	478,606	556,587	603,742
Fiji	435,072	670,828	449,360	495,882	498,211
Hong Kong	635,174	671,824	463,041	482,359	600,889
India	2,002,562	3,364,963	3,537,362	2,583,903	8,874,947
Malaya (British)	1,528,303	2,132,016	1,930,250	2,030,630	1,984,431
Mauritius	123,299	66,190	109,188	87,086	129,752
New Zealand	5,812,565	5,157,262	4,484,395	3,854,635	3,730,565
Papua	259,302	250,678	223,298	203,618	173,042
South African Union	2,657,232	2,201,531	1,741,831	2,847,194	1,953,313
Other British Possessions	1,810,629	1,293,988	1,336,096	1,231,624	1,524,921
Total British Possessions	16,813,002	17,074,314	15,925,114	15,223,335	20,887,805
Total British Countries	85,960,231	78,622,104	64,276,894	69,505,049	76,060,357
Foreign Countries—					
Belgium	7,182,703	6,175,337	8,303,127	9,320,508	9,044,614
Chile and Peru	232,422	726,118	265,197	356,013	428,431
China	624,812	745,764	410,073	310,482	1,117,142
Egypt	3,008,741	2,919,742	3,853,649	3,046,892	3,915,200
France	19,932,721	18,549,742	17,627,139	15,169,747	15,141,155
Germany	7,372,049	6,985,720	9,908,685	12,027,313	9,730,389
Italy	10,014,185	4,654,818	5,514,300	5,138,034	5,169,404
Japan	11,646,516	11,043,159	10,302,990	12,571,282	11,618,988
Netherlands	1,819,371	1,088,639	1,309,668	492,466	653,535
Netherlands East Indies	2,045,882	2,163,691	2,052,857	1,945,724	2,075,664
Norway	122,812	183,432	76,800	3,573	5,026
Pacific Islands	407,162	437,001	444,585	448,218	506,367
Philippine Islands	529,405	563,369	483,722	456,989	430,993
Russia	8	10	1,092	2,204,469	1,574,031
Spain	466,517	216,083	76,651	3,573	22,395
Sweden	470,006	151,330	139,046	430,266	413,938
United States of America	9,153,279	12,953,877	18,579,094	8,954,823	5,831,794
Other Foreign Countries	1,141,337	591,969	1,450,798	820,566	1,210,459
Total Foreign Countries	76,069,928	70,149,820	80,863,473	73,708,021	68,790,095
Total	162,030,159	148,771,934	145,140,367	143,213,070	144,850,453

4. **Percentage of Exports to Various Countries.**—The next table gives the relative proportions of the export trade of Australia with the countries specified, together with the proportions shipped to the United Kingdom, British Possessions and foreign countries respectively :—

**EXPORTS FROM AUSTRALIA.—PERCENTAGES TO VARIOUS COUNTRIES,
1924-25 TO 1928-29.**

Country.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	42.67	41.43	33.37	37.90	38.09
British Possessions—					
Canada	0.44	0.58	0.81	0.60	0.56
Ceylon	0.51	0.34	0.33	0.39	0.42
Fiji	0.27	0.39	0.31	0.34	0.34
Hong Kong	0.39	0.45	0.32	0.33	0.41
India	1.24	2.27	2.44	1.81	6.13
Malaya (British)	0.94	1.43	1.33	1.42	1.37
Mauritius	0.08	0.04	0.08	0.06	0.09
New Zealand	3.59	3.33	2.93	2.69	2.58
Papua	0.16	0.17	0.15	0.14	0.12
South African Union	1.64	1.48	1.20	1.99	1.35
Other British Possessions	1.12	0.87	0.92	0.86	1.05
Total British Possessions	10.38	11.35	10.82	10.63	14.42
Total British Countries	53.05	52.78	44.19	48.53	52.51
Foreign Countries—					
Belgium	4.43	4.16	5.73	6.51	6.24
Chile and Peru	0.14	0.49	0.18	0.25	0.30
China	0.32	0.50	0.28	0.21	0.77
Egypt	1.86	1.97	2.66	2.13	2.70
France	12.30	12.49	12.17	10.59	10.45
Germany	4.55	4.70	6.84	8.40	6.72
Italy	6.18	3.13	3.81	3.60	3.57
Japan	7.19	7.43	7.15	8.78	7.95
Netherlands	1.12	0.73	0.91	0.34	0.45
Netherlands East Indies	1.26	1.46	1.42	1.36	1.43
Norway	0.08	0.12	0.05	0.01	0.00
Pacific Islands	0.25	0.29	0.31	0.31	0.35
Philippine Islands	0.33	0.38	0.33	0.32	0.30
Russia	0.00	0.00	0.00	1.54	1.09
Spain	0.29	0.15	0.05	0.00	0.01
Sweden	0.29	0.10	0.10	0.30	0.29
United States of America	5.65	8.72	12.82	6.25	4.03
Other Foreign Countries	0.71	0.40	1.00	0.57	0.84
Total Foreign Countries	46.95	47.22	55.81	51.47	47.49
Total	100	100	100	100	100

5. **Principal Imports and Exports—Countries.**—The total value of imports from, and exports to, each of the more important countries during 1928-29 in order of value of total trade, together with brief particulars of the principal commodities interchanged with such countries, is given hereunder. Should further details be required reference may be made to the annual publication "Oversea Trade Bulletin, No. 26," issued by this Bureau, which gives details of the trade of 38 of the principal countries of the world with Australia

during the past five years. This publication also furnishes information regarding the country of origin of each statistical item of imports for the years 1927-28 and 1928-29, showing the value and (where available) the quantity imported from each country. The value of each item imported into each State of the Commonwealth is also shown. The publication referred to also gives information as to the country to which each item of exports was shipped during these years.

United Kingdom. *Total Imports of United Kingdom Origin*, £57,028,238. The two outstanding classes of goods imported were—Machines, machinery, and manufactures of metal, £20,593,894, and apparel, textiles, yarns, etc., £18,947,016. Imports of the undermentioned goods also contributed largely to the total:—Paper and stationery; drugs and chemicals; whisky; cigarettes; rubber and rubber manufactures; optical, surgical, and scientific instruments; chinaware and earthenware; glass and glassware; and fancy goods.

Total Exports to United Kingdom, £55,172,552. Of this total £54,526,838 represented Australian produce. The principal items of export were—Wool, £19,947,549; butter, £6,394,744; sugar, £5,057,262; and wheat, £5,035,076. Other commodities which bulked largely were—Pig lead; frozen meats; hides and skins; dried and fresh fruits; flour; wine; zinc; tallow; and gold specie.

United States of America. *Total Imports of United States Origin*, £35,308,345. The following were the more important items of import:—Motor chassis, bodies, etc., £7,172,760; petroleum and shale spirit, etc., £3,254,710; undressed timber, £2,144,665; unmanufactured tobacco, £1,827,652; rubber manufactures; metal manufactures; apparel, textiles, etc.; electrical machinery, materials and appliances; motive-power machinery; lubricating (mineral) oil; kerosene; musical instruments; paper and stationery; sulphur; and sausage casings.

Total Exports to United States, £5,831,794. Of this total £5,536,541 represented Australian produce. The principal exports were—Hides and skins, £2,494,292; wool, £1,883,155; sausage casings; tin; and pearlshell. The value of the exports of the above commodities represents 88 per cent. of the total exports to the United States.

France. *Total Imports of French Origin*, £3,700,303. Chief imports were—Piece goods of silk or containing silk, £908,132; trimmings for attire, £172,728; blouses, skirts, etc., £171,163; woollens; rubber manufactures; velvets, velveteens, plushes, etc.; paper and stationery; perfumery and toilet preparations; dressed furs; brandy; gums and resins; lace for attire; gloves; wine; piece goods of cotton and linen; hats and caps; and olive oil.

Total Exports to France, £15,141,155. Of this total £14,917,764 was Australian produce. Principal exports were—Wool, £11,865,744; sheep skins, £2,394,243; copra; wheat; concentrates; butter; and rabbit and hare skins.

Japan. *Total Imports of Japanese Origin*, £4,707,299. Principal imports—Piece goods of silk or containing silk, £3,024,463; cotton and linen piece goods, £277,318; raw silk; undressed timber; plywood; apparel and attire; crockery and other household ware; glass and glassware; oils; fancy goods; and fish.

Total Exports to Japan, £11,518,986. Of this total, £11,466,294 was Australian produce. Chief exports—Wool, £8,693,195; wheat, £1,353,874; tallow; zinc; pig lead; trochus shell; beef; milk and cream; and infants' and invalids' food.

Germany. *Total Imports of German Origin*, £4,545,501. Principal imports—Machinery and metal manufactures, £1,418,883; apparel and textiles, £1,194,409; paper and stationery, £221,447; toys, £145,971; pianos, £109,777; timepieces; fancy goods; bags and baskets; brushware; and fertilizers.

Total Exports to Germany, £9,730,389. Of this total, £9,692,292 was the produce of Australia. Chief exports were—Wool, £7,773,780; hides and skins, £596,444; apples, £278,224; wheat, £233,296; zinc, bars, blocks, etc., £227,095; pig lead, £71,531; silver and silver-lead ore and concentrates; beef; sausage casings; eucalyptus oil; and tallow.

Belgium. *Total Imports of Belgian Origin*, £910,797. Principal imports were—Glass and glassware, £234,238; cotton and linen piece goods, £87,152; velvets, etc., £51,254; paper, £40,727; arms; gloves; furs and other skins; and electrical machinery.

Total Exports to Belgium, £9,044,614. Of this total £9,036,468 was the produce of Australia. Chief items were—Wool, £6,434,323; pig lead, £686,784; beef, £438,942; zinc concentrates, £263,758; wheat, £259,588; hides and skins; silver and silver-lead ore and concentrates; barley; and copper in matte.

India. *Total Imports of Produce or Manufacture of India*, £6,052,506. Bags and sacks valued at £4,089,032 represent 68 per cent. of the total imports. The other principal items were—Hessians, £543,697; linseed, £411,683; tea, £370,659; hides and skins, £117,755; rice; gums and resins; coffee and chicory; kapok; mats, matting of coir; oil cake; jute; and paraffin wax.

Total Exports to India, £8,874,947. Of this total £8,870,096 represented Australian produce. The chief exports were—Wheat, £6,742,383; silver, £869,473; gold, £766,100; undressed timber; tallow; horses; wool; and jams and jellies.

Netherlands East Indies. *Total Imports of Netherlands East Indies Origin*, £7,091,619. The principal imports were—Petroleum spirit, including benzine, etc., £3,467,014; tea, £1,554,781; crude petroleum, £696,998; kapok, £376,070; crude rubber; kerosene; flax and hemp; and coffee and chicory.

Total Exports to Netherlands East Indies, £2,075,664. Of this total £2,052,073 was the produce of Australia. Chief exports were—Flour, £898,682; butter, £521,253; preserved milk and cream, £208,175; leather, £88,798; biscuits; bacon and hams; soap; medicines; and fruit juices and syrups.

New Zealand. *Total Imports of New Zealand Origin*, £2,202,580. The principal items were—Timber, £484,943; hides and skins, £451,964; wool, £333,384; meats, £157,525; gold, £134,610; flax and hemp, £92,823; grain and pulse; fish; horses; linseed and other seeds; and cheese.

Total Exports to New Zealand, £3,730,565. Of this total £2,823,942 was Australian produce. The chief items were—Machinery and metal manufactures, £483,187; manufactured tobacco, £338,966; timber, £332,900; apparel, textiles, and manufactured fibres, £245,536; coal, £206,967; wheat, £63,312; fruits, dried and fresh; confectionery; tea; and talking machines, phonographs, etc.

Italy. *Total Imports of Italian Origin*, £1,449,629. Chief imports were—Silk piece goods, £262,749; hats, £219,783; hides and skins, £110,044; motor cars, £91,564; pneumatic tyres, £65,067; edible nuts, £37,056; essential oils; marble; and flax and hemp.

Total Exports to Italy, £5,169,404. Of this total, £5,149,552 was Australian produce. Chief exports were—Wool, £3,019,802; wheat, £1,440,299; hides and skins, £415,658; fish oil, £154,282; tallow, £52,424; copra; and beef.

Canada. *Total Imports of Canadian Origin*, £4,871,643. The principal imports were—Chassis for motor cars, £1,674,880; printing paper, £955,207; fish preserved in tins, £487,639; agricultural, etc., implements and machinery, £311,732; dressed timber, £105,037; undressed timber, £77,539; rubber manufactures, £41,452; wrapping and other paper; motive power machinery; boots and shoes; electrical machinery and appliances; gloves; and iron and steel pipes and tubes.

Total Exports to Canada, £813,992. Of this total £807,950 was Australian produce. Chief items were—Fruits, dried, £210,664; sugar (cane), £132,451; wool—greasy, scoured, and tops, £113,926; hides and skins; and meats.

Malaya (British). *Total Imports of Malayan (British) Origin*, £1,133,963. Principal items were—Rubber and manufactures thereof, £850,633; spices, £155,182; sago and tapioca, £30,152; fruits and vegetables, preserved; tin ingots; gums and resins; and bamboo, cane, etc.

Total Exports to Malaya (British), £1,984,431. Of this total, £1,905,244 was the produce of Australia. Chief exports were—Preserved milk and cream, £780,999; flour, £585,952; butter, £119,686; frozen meats, £110,234; fruits, fresh and preserved, £36,990; soap, £30,144; mining machinery; coal; bacon and hams; leather; and sheep.

Pacific Islands (British and Foreign). *Total Imports of Produce of the Pacific Islands*, £2,111,643. Chief items were—Rock phosphates, £1,079,502; copra, £576,404; gold bullion, £206,151; cocoa beans; hides and skins; timber; molasses, etc.; and shells.

Total Exports to Pacific Islands, £1,920,087. Of this amount £1,364,885 was the produce of Australia. The exports to these islands cover a very wide range of commodities. The outstanding groups were—Foodstuffs of vegetable origin, £451,338; machines machinery and metal manufactures, £268,201; foodstuffs of animal origin, £205,172; coal and coke, £162,844; tobacco, cigars and cigarettes, £152,881; and apparel, textiles, etc., £122,395. The chief individual items were—Flour; meats; tobacco; coal; coke; bran, pollard and sharps; timber; cotton and linen piece goods; biscuits; sugar; rice; and ale, beer, etc.

South African Union. *Total Imports of Produce of South African Union*, £586,879. Principal items were—Precious stones, £371,955; fish, £80,764; asbestos, crude, £75,634; glue pieces and sinews; tobacco; and feathers.

Total Exports to South African Union, £1,953,313. Of this total £1,946,984 was the produce of Australia. Chief exports were—Wheat, £1,039,714; timber, £269,874; flour £265,833; preserved milk and cream, £94,158; tallow, £93,082; gelatine and glue of all kinds; butter; sheep; and soap.

Egypt. *Total Imports of Egyptian Origin*, £38,845. Chief items were—Asphalt, bitumen and natural pitch, £26,905; gums and resins, £5,054; raw cotton, £1,052; and cigarettes, £914.

Total Exports to Egypt, £3,915,200. Principal items were—Flour, £2,515,117; wheat, £1,196,089; frozen meat, £126,106; and butter, £58,991.

Ceylon. *Total Imports of Ceylon Origin*, £1,966,171. The chief items were—Tea, £1,530,318; crude rubber, £263,629; nuts, £91,235; fibres; cocoa beans; and yarns.

Total Exports to Ceylon, £603,742. Of this total £602,868 was Australian produce. The principal exports were—Flour, £221,233; gold specie, £143,019; undressed timber £46,051; butter; frozen meats; preserved milk; and fresh apples.

Sweden. *Total Imports of Swedish Origin*, £1,480,808. Chief items were—Paper, £378,403; timber, £324,390; wood pulp, £143,779; matches, £115,100; dairy implements and machinery, £97,483; paper boards, £70,096; vacuum cleaners, £51,550; electrical machinery and appliances and roller bearings and ball bearings.

Total Exports to Sweden, £413,938. Chief items were—Wheat, £214,822; wool, £131,621; apples, fresh, £26,912; and hides—cattle, £22,750.

Russia. *Total Imports of Russian Origin*, £125,766. Chief items were—Bristles, horsehair drafts; dressed furs; salmon in tins; and hides and skins.

Total Exports to Russia, £1,574,603. Chief item was wool, £1,568,579.

Switzerland. *Total Imports of Swiss Origin*, £1,969,079. Chief items were—Piece goods of silk, £732,383; clocks and watches, £312,429; trimmings and ornaments for attire, £155,755; handkerchiefs; cheese; talking machines; lace for attire; and other apparel and textiles.

Total Exports to Switzerland, £14,194. Chief item was—Timepieces and parts, £5,899.

Netherlands. *Total Imports of Netherlands Origin*, £1,145,378. Principal items were—Electrical machinery and appliances, £478,719; artificial silk, £111,674; jewellery, £77,391; paper, £59,411; caramel, caramel paste, cocoa butter, etc., £57,813; gin, £36,332; piece goods; glass and glassware; and drugs and chemicals.

Total Exports to Netherlands, £653,535. Chief exports were—Wheat, £461,714; tallow, £56,160; wool, £27,411; hides and skins, £25,415; copra, £23,815; and fresh apples, £15,206.

China. *Total Imports of Chinese Origin*, £633,217. The principal items were—Edible nuts, £55,357; hats and caps, £50,641; tea, £46,967; rice, £42,528; tung, turkey red, etc., oil, £39,132; bristles, horsehair drafts, £33,395; ginger, £32,839; silk piece goods, £18,822; oils; lace for attire; cosies and cushions, etc.; and grass straw.

Total Exports to China, £1,117,142. Of this total £1,112,165 was Australian produce. Principal items were—Wheat, £651,865; sandalwood, £103,485; leather, £92,067; milk and cream, £83,492; butter, £61,997; undressed timber; jams and jellies; and stearine.

Norway. *Total Imports of Norwegian Origin*, £890,414. Principal items were—Dressed timber, £391,159; paper, £224,482; preserved fish, £187,908; ores, clays, etc.; and calcium carbide.

Total Exports to Norway, £5,026. Chief item was—Personal and household effects, £3,000.

Philippine Islands. *Total Imports of Philippine Islands Origin*, £163,030. Chief items were—Timber, £61,102; hemp, £60,732; hats and caps; and tobacco and cigars.

Total Exports to Philippine Islands, £430,993. Principal items were—Frozen meats, £147,185; flour, £99,697; butter, £66,305; coal, £39,878; cattle; and bacon and hams.

Hong Kong. *Total Imports of Hong Kong Origin*, £13,273. Chief items were—Clouded bamboo, £2,313; ginger, £2,274; wicker, bamboo, and cane; and grass straw.

Total Exports to Hong Kong, £600,889. Chief items were—Sandalwood, £156,086; leather and manufactures thereof, £110,536; butter, £60,775; flour, £31,756; frozen meats, £30,793; bêche-de-mer; pig lead; and milk and cream.

Spain. *Total Imports of Spanish Origin*, £193,865. Chief items were—Corks, etc., £74,455; edible nuts, £62,128; wine; liquorice; and paints and varnishes.

Total Exports to Spain, £22,395. Chief item was hides and skins, £17,090.

6. Imports—States, and Total.—Imports are recorded at the port of landing and are credited to the State in which the port is situated. Complete records are not obtainable of interstate trade, and the State totals represent, therefore, the value of oversea goods consigned to the various States. They do not, moreover, represent the consumption within each State, as a proportion of the imports into New South Wales and Victoria are subsequently transhipped to the other States. The extent of this transhipment is indicated by the fact that in 1928–29 the excess of imports over exports in New South Wales amounted to £5.8 per head and in Victoria to £3.7 per head, whereas in the other States there was an excess of exports amounting to £12.7 per head in Queensland, South Australia £6.1, Western Australia £14.4, and Tasmania £14.4. The total imports for the last five years are given hereunder.

IMPORTS.—STATES, AND TOTAL, 1924–25 TO 1928–29.

State.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
	£	£	£	£	£
New South Wales ..	66,321,757	64,009,929	68,933,904	65,081,801	63,491,751
Victoria ..	54,289,690	50,327,055	55,560,936	47,911,131	46,005,650
Queensland ..	12,833,375	13,772,854	13,497,758	11,760,214	11,594,348
South Australia ..	13,970,327	14,079,788	15,507,260	12,509,300	11,305,866
Western Australia ..	8,026,452	7,896,174	9,447,033	9,011,294	9,453,169
Tasmania ..	1,681,059	1,518,210	1,732,889	1,640,817	1,765,052
Northern Territory ..	20,636	34,168	36,814	30,413	32,045
Total ..	157,143,296	151,638,178	164,716,594	147,944,970	143,647,881

7. Exports—States, and Total.—The following table gives the value of exports shipped from each State during the last five years. It must be noted that the value of goods transferred from one State to another for shipment to oversea countries is shown as an export from the State from which the goods were finally despatched.

EXPORTS.—STATES, AND TOTAL, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales ..	60,577,094	54,001,814	62,815,077	51,882,915	49,288,900
Victoria ..	41,641,979	33,107,576	34,741,689	31,728,558	39,437,225
Queensland ..	24,441,600	26,384,916	14,721,201	21,855,054	23,251,716
South Australia ..	19,225,027	19,450,144	17,123,012	18,030,143	14,811,542
Western Australia ..	12,859,498	12,611,631	13,067,922	16,252,679	15,301,307
Tasmania ..	3,243,017	2,970,226	2,396,496	3,434,456	2,706,042
Northern Territory ..	41,944	35,902	29,786	29,265	53,720
Total ..	162,030,159	148,562,209	144,895,183	143,213,070	144,850,452

8. Balance of Oversea Trade—States and Total.—From the two previous tables the balance of oversea trade for each State is obtainable showing the excess of imports or exports in each year. This information is published in the following table and indicates to some extent the volume of transhipment and forwarding trade which takes place between the several States. During each of the five years from 1924-25 to 1928-29 a considerable excess of imports entered New South Wales and Victoria, whilst in all other States there was an excess of exports. This position was due to the fact that whereas most exports are shipped direct from the State of origin, yet imports, in many instances, are consigned to New South Wales or Victoria for transhipment or forwarding by rail to the other States.

BALANCE OF OVERSEA TRADE—STATES AND TOTAL, 1924-25 TO 1928-29.

State.	Item.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
		£	£	£	£	£
New South Wales	Excess of Imports ..	5,744,663	10,008,115	6,118,827	13,108,886	14,202,851
	Excess of Imports per head of population	2.54	4.35	2.60	5.49	5.79
Victoria ..	Excess of Imports ..	12,647,711	17,219,479	20,819,247	16,182,573	6,568,425
	Excess of Imports per head of population	7.63	10.23	12.17	9.29	3.73
Queensland ..	Excess of Exports ..	11,608,225	12,612,062	1,223,443	10,094,840	11,657,368
	Excess of Exports per head of population	13.90	14.64	1.39	11.23	12.72
South Australia	Excess of Exports ..	5,254,700	5,370,356	1,615,752	5,520,843	3,505,676
	Excess of Exports per head of population	9.76	9.74	2.85	9.59	6.05
Western Australia	Excess of Exports ..	4,833,046	4,715,457	3,620,889	7,241,385	5,848,138
	Excess of Exports per head of population	13.27	12.67	9.56	18.46	14.41
Tasmania ..	Excess of Exports ..	1,561,958	1,452,016	663,607	1,793,639	940,990
	Excess of Exports per head of population	7.17	6.69	3.09	8.31	4.35
Northern Territory	Excess of Imports ..	a21,308	a1,734	7,028	1,148	a21,675
	Excess of Imports per head of population	a5.92	a0.47	1.80	0.26	a5.44
Total ..	Excess of Imports ..	a4,886,863	3,075,969	19,821,411	4,731,900	a1,202,571
	Excess of Imports per head of population	a0.83	0.51	3.24	0.76	a0.19

(a) Excess of Exports.

9. Trade of Principal Ports.—The next table gives the value of imports received at, and exports despatched from, the principal ports of Australia during 1927-28 and 1928-29.

OVERSEA TRADE.—PRINCIPAL PORTS, 1927-28 AND 1928-29.

Port.	1927-28.			1928-29.		
	Imports.	Exports.	Total.	Imports.	Exports.	Total.
<i>New South Wales.</i>	£	£	£	£	£	£
Sydney ..	63,048,609	50,449,821	113,498,430	61,451,153	48,163,967	109,615,120
Newcastle ..	1,921,958	1,303,958	3,225,916	1,705,951	980,340	2,686,291
Other Ports ..	111,234	129,136	240,370	334,647	144,593	479,240
Total ..	65,081,801	51,882,915	116,964,716	63,491,751	49,288,900	112,780,651
<i>Victoria.</i>						
Melbourne ..	47,090,110	28,720,490	75,810,600	44,446,014	34,321,608	78,767,622
Geelong ..	680,642	1,260,758	1,941,400	1,449,618	3,141,361	4,590,979
Other Ports ..	140,379	1,747,310	1,887,689	110,018	1,974,256	2,084,274
Total ..	47,911,131	31,728,558	79,639,689	46,005,650	39,437,225	85,442,875
<i>Queensland.</i>						
Brisbane ..	10,279,647	15,827,062	26,106,709	9,954,107	15,246,478	25,200,585
Rockhampton ..	343,815	395,913	739,728	304,983	640,506	945,489
Townsville ..	627,978	2,187,625	2,815,603	752,859	2,562,519	3,315,378
Other Ports ..	508,774	3,444,454	3,953,228	582,399	4,802,213	5,384,612
Total ..	11,760,214	21,855,054	33,615,268	11,594,348	23,251,716	34,846,064
<i>South Australia.</i>						
Port Adelaide, including Adelaide	10,220,260	12,857,944	23,078,204	11,101,541	9,889,856	20,991,397
Port Pirie ..	2,229,807	2,496,193	4,726,005	104,917	3,456,179	3,561,096
Wallaroo ..	59,233	1,579,886	1,639,119	52,293	936,388	988,681
Other Ports ..	..	1,096,115	1,096,115	47,115	529,119	576,234
Total ..	12,509,300	18,030,143	30,539,443	11,305,866	14,811,542	26,117,408
<i>Western Australia.</i>						
Fremantle (Perth)	8,692,103	12,159,807	20,851,910	9,218,962	11,525,249	20,744,211
Bunbury ..	36,903	1,850,144	1,887,047	38,774	1,261,516	1,300,290
Other Ports ..	282,288	2,242,728	2,525,016	195,433	2,514,542	2,709,975
Total ..	9,011,294	16,252,679	25,263,973	9,453,169	15,301,307	24,754,476
<i>Tasmania.</i>						
Hobart ..	929,290	2,613,410	3,542,700	890,542	2,052,717	2,943,259
Launceston ..	666,008	658,011	1,324,019	820,316	530,844	1,351,160
Other Ports ..	45,619	163,035	208,554	54,194	122,481	176,675
Total ..	1,640,817	3,434,456	5,075,273	1,765,052	2,706,042	4,471,094
<i>Northern Territory.</i>						
Port Darwin ..	30,413	29,265	59,678	32,045	53,720	85,765
Grand Total	147,944,970	143,213,070	291,158,040	143,647,881	144,850,452	288,498,333

§ 6. Exports to Eastern Countries.

1. **Principal Articles Exported.**—The following table shows the value of exports of Australian and Other Produce from Australia to Eastern countries during the last five years. The principal countries concerned in this trade are China, India and Ceylon Japan, Netherlands East Indies and Timor (Portuguese), Philippine Islands, Malaya (British), and Hong Kong. During the year 1928–29 the export trade with Eastern countries increased considerably, due mainly to exceptionally heavy shipments of wheat to India. Increased exports of butter, flour, meats, milk and cream, sandalwood and skins also were made in 1928–29, whilst exports of copper, jams, timber and wool declined. The particulars given in the tables apply to these countries only.

EXPORTS FROM AUSTRALIA TO EASTERN COUNTRIES.—PRINCIPAL COMMODITIES, 1924–25 TO 1928–29.

Article.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
	£	£	£	£	£
Biscuits	63,233	117,266	92,263	85,791	76,893
Butter	698,365	794,427	761,496	834,136	873,290
Cheese	8,029	11,299	12,109	10,708	10,629
Coal	258,561	211,899	215,701	180,628	67,006
Copper	14,170	19,620	17,558	..	..
Grain and pulse—					
Wheat	2,229,079	4,058,427	1,991,341	1,415,714	3,756,564
Flour	1,576,034	2,262,492	1,827,140	1,779,947	1,873,074
Other (prepared and unprepared) ..	16,345	13,911	19,708	21,054	56,385
Hay, chaff, and compressed fodder ..	22,787	22,082	30,956	18,797	16,131
Horses	93,077	105,092	104,048	110,358	114,316
Iron and steel (unmanufactured) ..	601	5,280	19,745	12,469	18,955
Jams and jellies	60,965	66,010	60,681	55,765	46,498
Lead, Pig	554,082	375,148	144,737	112,963	123,953
Leather	326,188	420,446	322,195	300,983	325,544
Meats	399,315	477,799	488,038	479,303	562,899
Milk and cream	1,385,142	1,334,861	921,597	1,107,450	1,221,484
Pearl shell and trochus shell ..	63,696	95,522	87,263	95,950	95,327
Sandalwood	205,477	252,800	251,625	194,616	278,238
Skins, hoofs, horns, bones, sinews, tallow ..	804,308	690,184	651,228	547,190	578,041
Sulphate of ammonia	38,411	56,054	30,079	3,105	..
Timber (undressed)	56,269	199,959	332,129	239,806	151,712
Wool	7,609,507	5,890,777	7,892,553	10,371,126	8,806,488
Other merchandise	1,296,138	1,303,102	1,171,228	1,297,003	1,328,756
Total merchandise	17,779,779	18,784,457	17,445,418	19,274,862	25,362,183
Specie, and gold and silver bullion ..	1,966,739	2,407,467	2,274,885	1,669,388	1,845,964
Total Exports	19,746,518	21,191,924	19,720,303	20,944,250	27,208,147

2. **Destination of Exports.**—The next table shows the destination of the merchandise exported to Eastern countries during the last five years.

EXPORTS FROM AUSTRALIA OF MERCHANDISE TO PRINCIPAL EASTERN COUNTRIES.—DESTINATION, 1924–25 TO 1928–29.

Country.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
	£	£	£	£	£
China	454,061	745,784	410,073	310,482	1,075,718
East Indies	2,045,701	2,131,407	2,050,872	1,946,968	2,059,017
Hong Kong	631,973	661,979	463,041	482,359	600,889
India and Ceylon	943,820	1,324,743	1,757,470	1,499,102	7,702,149
Japan	11,646,516	11,043,159	10,362,090	12,571,282	11,518,986
Malaya (British)	1,528,303	2,114,016	1,917,250	2,007,680	1,974,431
Philippine Islands	529,405	563,369	483,722	456,989	430,993
Total	17,779,779	18,784,457	17,445,418	19,274,862	25,362,183

§ 7. Classified Summary of Australian Oversea Trade.

1. Imports.—The following table shows the value of imports into Australia during each of the last five years, arranged in classified order in accordance with the statistical classification which came into operation on 1st July, 1922 :—

AUSTRALIAN IMPORTS.—IN CLASSES, 1924-25 TO 1928-29.

Classes.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
I. Animal foodstuffs, etc. ..	1,978,092	2,473,756	3,099,388	2,866,708	2,367,393
II. Vegetable foodstuffs; non-alcoholic beverages, etc. ..	6,435,786	7,087,836	7,553,785	6,605,536	6,246,824
III. Alcoholic liquors, etc. ..	2,177,285	2,297,783	1,815,612	1,767,497	1,876,944
IV. Tobacco, etc. ..	2,410,190	2,760,176	2,704,754	2,960,620	2,694,546
V. Live animals ..	163,439	183,287	167,030	120,007	159,325
VI. Animal substances, etc. ..	1,202,549	1,127,972	1,731,921	2,182,966	1,972,615
VII. Vegetable substances, etc. ..	3,223,837	3,568,614	3,484,472	3,242,367	3,009,229
VIII. Apparel, textiles, etc. ..	42,372,272	39,055,392	42,416,966	38,488,491	36,710,916
IX. Oils, fats, and waxes ..	8,559,132	10,065,509	10,977,790	9,872,014	11,106,944
X. Paints and varnishes ..	657,075	705,743	814,378	778,663	784,594
XI. Stones and minerals, etc. ..	589,568	766,149	941,453	1,060,830	1,010,951
XII. Metals, metal manufactures, and machinery ..	45,594,076	45,498,649	51,282,059	42,801,886	42,987,433
XIII. Rubber and leather, etc. ..	3,384,270	5,727,019	5,593,757	4,157,292	2,943,661
XIV. Wood and wicker, etc. ..	5,046,136	5,911,637	5,516,478	5,818,541	4,880,755
XV. Earthenware, etc. ..	2,530,161	2,456,061	2,610,987	2,422,822	2,455,467
XVI. Paper and stationery ..	6,845,778	7,126,461	7,936,028	7,873,998	7,778,529
XVII. Jewellery, etc. ..	2,643,680	2,746,403	2,849,587	2,621,411	2,658,148
XVIII. Optical, surgical, and scientific instruments ..	1,657,928	1,843,897	1,853,812	1,464,794	1,443,356
XIX. Drugs, chemicals, etc. ..	4,120,456	4,316,437	5,027,176	4,811,212	5,213,338
XX. Miscellaneous ..	4,993,095	5,492,718	5,695,935	4,979,163	4,979,198
XXI. Gold and silver; and bronze specie ..	10,548,493	426,674	643,226	1,048,152	367,715
Total ..	157,143,296	151,638,178	164,716,594	147,944,970	143,647,881

2. Exports.—In the appended tables the exports from Australia are shown in classes according to the same classification, distinguishing (a) Australian Produce; (b) Other Produce (Re-exports); and (c) Total Exports.

EXPORTS FROM AUSTRALIA.—IN CLASSES, 1924-25 TO 1928-29.

Classes.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
I. Animal foodstuffs, etc. ..	19,280,478	16,415,297	12,105,989	13,264,785	15,861,935
II. Vegetable foodstuffs; non-alcoholic beverages, etc. ..	48,453,202	33,673,876	32,689,285	28,993,658	36,375,178
III. Alcoholic liquors, etc. ..	226,600	404,009	875,036	1,103,910	544,538
IV. Tobacco, etc. ..	381,504	476,352	382,669	379,076	420,499
V. Live animals ..	234,270	221,876	246,348	255,584	279,189
VI. Animal substances, etc. ..	72,024,630	72,116,824	69,168,778	76,563,648	71,456,567
VII. Vegetable substances, etc. ..	754,645	676,292	398,192	553,415	594,384
VIII. Apparel, textiles, etc. ..	173,850	177,401	164,180	150,923	172,474
IX. Oils, fats, and waxes ..	1,839,925	1,825,232	1,589,341	1,274,373	1,624,812
X. Paints and varnishes ..	49,877	46,945	47,306	34,858	50,320
XI. Stones and minerals, etc. ..	2,847,188	3,239,825	2,174,545	2,585,864	1,634,414
XII. Metals, metal manufactures, and machinery ..	6,644,892	7,082,368	6,143,178	6,097,113	5,395,367
XIII. Rubber and leather, etc. ..	774,632	782,138	655,949	628,192	576,419
XIV. Wood and wicker, etc. ..	1,662,163	1,421,842	1,492,037	1,260,689	1,178,698
XV. Earthenware, etc. ..	89,993	93,199	99,426	120,945	77,680
XVI. Paper and stationery ..	158,590	156,580	157,194	158,884	162,908
XVII. Jewellery, etc. ..	98,763	132,991	103,675	104,087	61,178
XVIII. Optical, surgical, and scientific instruments ..	63,727	96,555	159,653	182,650	240,604
XIX. Drugs, chemicals, etc. ..	545,309	601,642	615,884	489,740	581,000
XX. Miscellaneous ..	572,841	590,891	589,362	995,248	577,772
XXI. Gold and silver; and bronze specie ..	2,065,304	5,473,435	12,303,031	3,738,905	3,892,352
Total ..	158,942,417	145,704,799	142,151,058	138,947,447	141,758,233

EXPORTS FROM AUSTRALIA.—IN CLASSES, 1924-25 TO 1928-29—*continued*.

Classes.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
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(b) OTHER PRODUCE.—RE-EXPORTS.

	£	£	£	£	£
I. Animal foodstuffs, etc. ..	17,908	24,074	39,598	21,655	22,879
II. Vegetable foodstuffs; non-alcoholic beverages, etc. ..	518,744	359,249	283,405	285,375	225,730
III. Alcoholic liquors, etc. ..	82,036	47,069	35,322	40,525	29,873
IV. Tobacco, etc. ..	88,173	79,820	83,657	103,393	108,099
V. Live animals ..	24,486	5,408	10,363	27,010	25,196
VI. Animal substances, etc. ..	31,131	54,393	33,613	38,627	40,878
VII. Vegetable substances, etc. ..	534,749	576,471	630,755	502,739	409,360
VIII. Apparel, textiles, etc. ..	426,516	375,336	381,919	368,666	358,381
IX. Oils, fats, and waxes ..	183,463	136,630	78,053	86,180	89,620
X. Paints and varnishes ..	8,242	10,812	8,623	8,418	10,530
XI. Stones and minerals, etc. ..	2,786	2,048	2,375	2,980	1,589
XII. Metals, metal manufactures, and machinery ..	512,575	541,795	622,751	718,443	742,469
XIII. Rubber and leather, etc. ..	54,723	35,908	66,136	67,857	61,404
XIV. Wood and wicker, etc. ..	56,033	50,203	44,640	57,129	61,677
XV. Earthenware, etc. ..	15,152	17,029	13,849	13,823	16,201
XVI. Paper and stationery ..	83,319	87,482	76,838	91,405	82,647
XVII. Jewellery, etc. ..	77,376	100,948	124,140	53,049	166,093
XVIII. Optical, surgical, and scientific instruments ..	105,638	94,749	110,636	91,405	106,092
XIX. Drugs, chemicals, etc. ..	56,107	51,602	46,848	47,986	65,962
XX. Miscellaneous ..	205,287	361,914	239,583	1,623,303	433,871
XXI. Gold and silver; and bronze specie ..	3,300	53,695	6,200	10,650	34,168
Total	3,087,742	3,067,135	2,989,309	4,265,623	3,092,219

(c) TOTAL EXPORTS.—AUSTRALIAN PRODUCE AND RE-EXPORTS.

	£	£	£	£	£
I. Animal foodstuffs, etc. ..	19,298,384	16,439,371	12,145,587	13,286,440	15,884,314
II. Vegetable foodstuffs; non-alcoholic beverages, etc. ..	48,971,946	34,033,125	32,972,690	29,279,033	36,000,903
III. Alcoholic liquors, etc. ..	308,636	451,078	910,358	1,144,435	574,411
IV. Tobacco, etc. ..	469,677	555,172	466,326	483,369	528,598
V. Live animals ..	258,765	227,284	256,711	262,594	304,385
VI. Animal substances, etc. ..	72,055,761	72,171,717	69,202,396	76,602,275	71,497,445
VII. Vegetable substances, etc. ..	1,289,394	1,252,763	1,078,947	1,056,154	1,003,694
VIII. Apparel, textiles, etc. ..	600,346	552,737	546,099	549,589	530,855
IX. Oils, fats, and waxes ..	2,023,388	1,961,862	1,667,394	1,360,558	1,714,432
X. Paints and varnishes ..	58,119	57,757	55,929	43,276	60,850
XI. Stones and minerals, etc. ..	2,849,969	3,241,873	2,176,920	2,588,844	1,636,003
XII. Metals, metal manufactures, and machinery ..	7,157,467	7,624,163	6,765,929	6,815,556	6,137,836
XIII. Rubber and leather, etc. ..	829,405	818,046	722,085	696,049	637,823
XIV. Wood and wicker, etc. ..	1,718,196	1,472,045	1,536,677	1,317,818	1,240,375
XV. Earthenware, etc. ..	105,145	110,228	103,275	134,773	93,881
XVI. Paper and stationery ..	241,909	244,291	234,032	250,289	245,555
XVII. Jewellery, etc. ..	176,139	233,939	227,815	157,136	227,271
XVIII. Optical, surgical, and scientific instruments ..	169,365	191,304	270,289	274,053	346,096
XIX. Drugs, chemicals, etc. ..	601,416	653,244	662,732	577,726	646,962
XX. Miscellaneous ..	778,128	952,805	828,945	2,623,551	1,011,043
XXI. Gold and silver; and bronze specie ..	2,068,604	5,527,130	12,309,231	3,749,555	3,926,520
Total	162,030,159	148,771,934	145,140,367	143,213,070	144,850,452

3. Imports of Principal Articles.—The next table shows the quantity, where available, and the value of the principal articles imported into Australia. The articles are given in the order in which they appear in the detailed classification.

PRINCIPAL COMMODITIES IMPORTED.—AUSTRALIA, 1924-25 TO 1928-29.

Article.		1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Fish preserved in tins	lb.	25,341,422	25,561,258	30,067,887	23,496,685	28,266,411
	£	1,120,428	1,164,223	1,418,103	1,141,493	1,265,510
Tea	lb.	49,256,308	47,087,973	52,428,163	45,378,944	50,038,049
	£	3,872,829	3,639,633	3,908,607	3,473,808	3,506,605
Whisky	gal.	1,257,801	1,349,086	925,710	1,031,212	1,024,807
	£	1,520,331	1,645,173	1,134,779	1,104,257	1,216,154
Tobacco and preparations thereof	£	2,410,190	2,760,176	2,704,754	2,960,620	2,694,546
Copra	cwt.	591,183	646,740	784,896	611,367	576,414
	£	707,859	826,442	918,164	701,156	651,683
Socks and stockings	£	1,701,032	1,645,621	1,659,624	1,348,950	1,148,409
Gloves	£	593,585	518,912	559,582	505,512	520,121
Hats and caps	£	556,473	691,667	870,124	952,126	983,059
Trimmings and ornaments	£	1,095,421	997,826	1,245,534	917,323	869,714
Carpets and carpeting	£	1,551,929	1,267,804	1,464,201	1,428,745	1,389,022
Floorcloths and linoleums	£	1,348,657	1,306,723	1,308,612	1,202,198	1,046,787
Piece Goods—						
Canvas and duck	£	895,574	914,514	836,142	711,209	689,991
Cotton and linen	£	10,932,661	10,350,581	10,028,947	8,593,908	7,571,863
Silk or containing silk	£	5,125,909	5,257,051	6,866,738	5,963,339	6,532,742
Woolen or containing wool	£	3,211,351	2,320,426	2,450,573	2,525,179	1,492,792
Sewing silks, cottons, etc.	£	1,192,531	917,818	895,434	916,949	789,032
Bags and sacks	£	4,048,847	4,188,115	4,316,592	3,640,348	4,008,972
Yarns—						
Cotton	£	444,017	494,901	836,487	672,496	858,986
Woolen	£	999,799	427,882	568,843	315,157	283,890
Kerosene	gal.	24,910,890	25,371,581	33,543,260	34,704,643	40,091,368
	£	862,389	921,271	1,264,257	1,036,323	1,159,438
Lubricating (mineral) oil	gal.	9,413,081	11,497,059	13,818,490	12,232,088	16,861,428
	£	864,700	942,952	1,153,357	936,253	1,319,081
Petroleum spirit, benzine, etc.	gal.	89,750,852	115,566,839	145,702,909	177,870,753	199,988,104
	£	5,379,163	6,519,015	6,648,567	6,087,217	6,816,287
Electrical machinery and appliances	£	4,954,417	4,721,523	5,755,495	5,405,227	4,809,652
Electrical cable and wire, covered	cwt.	183,433	216,452	317,919	331,348	283,484
	£	1,327,766	1,433,177	1,679,972	1,721,688	1,317,115
Agricultural machinery	£	784,024	761,766	722,094	691,343	611,875
Metal-working machinery	£	427,166	476,974	509,252	509,574	398,684
Traction engines and road rollers	£	957,170	909,322	1,248,601	1,196,660	1,239,124
Iron and Steel—						
Pipes and tubes	£	1,389,130	1,590,127	1,691,954	1,554,577	1,805,565
Plate and sheet	£	5,011,845	4,181,354	4,723,733	4,703,837	3,954,003
Cutlery	£	899,860	872,086	984,835	819,994	812,659
Tools of trade	£	1,177,854	1,146,850	1,257,031	1,057,318	1,074,219
Motor cars, chassis, bodies, and parts	£	11,608,295	11,978,188	14,178,439	8,256,787	10,677,361
Rubber and rubber manufactures	£	2,919,389	5,273,954	5,085,980	3,721,194	2,497,423
Timber, undressed, including logs(a)	sp. ft.	315,938,784	392,019,451	367,820,251	431,852,496	323,088,698
	£	3,141,415	3,795,111	3,455,414	3,754,288	3,054,597
Crockery	£	822,298	740,929	766,157	748,167	741,481
Glass and glassware	£	1,237,562	1,277,871	1,301,772	1,219,762	1,215,092
Paper, printing	£	2,793,332	2,853,232	3,232,956	3,086,023	3,046,868
Stationery and paper manufactures	£	2,389,286	2,649,472	2,781,311	2,926,753	2,800,175
Drugs, chemicals, and fertilizers	£	4,120,456	4,316,437	5,027,176	4,811,212	5,213,338
Musical instruments, pianos, etc.	£	1,370,983	1,450,556	1,450,828	961,052	646,688
All other articles	£	59,380,373	61,700,523	55,715,573	53,664,948	50,827,328
Total Imports	£	157,143,296	151,638,178	164,716,594	147,944,970	143,647,881

(a) Exclusive of undressed timber not measured in super. feet.

4. Exports of Principal Articles of Australian Produce.—The following table shows both quantity and value of the principal articles of Australian produce exported. The articles are given in the order in which they appear in the detailed classification.

PRINCIPAL COMMODITIES EXPORTED.—AUSTRALIA, 1924-25 TO 1928-29.

Article.		1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Butter	centl.	1,452,313	978,998	765,165	991,649	1,024,428
	£	10,006,081	7,006,830	5,447,224	6,905,933	7,545,430
Cheese	centl.	103,540	68,728	36,438	69,267	83,310
	£	363,757	270,712	131,168	260,235	329,700
Eggs in shell	doz.	691,740	1,531,744	3,151,965	1,104,005	2,916,388
	£	53,518	116,681	233,670	85,844	218,929
Meats	centl.	7,037,850	7,455,403	5,198,812	4,811,522	6,335,949
	£	291,657	269,050	177,525	206,228	263,852
Milk and cream	centl.	1,694,230	1,476,205	1,080,963	1,188,504	1,424,318
	£	782,830	550,520	633,620	631,551	1,071,543
Fruits, dried	centl.	1,930,420	1,458,396	1,647,172	1,600,093	2,299,330
	£	1,013,176	1,496,545	757,598	1,865,851	826,523
Fruits, fresh	centl.	1,089,072	1,553,650	805,260	1,818,624	941,880
	£	745,208	364,764	1,010,740	625,722	639,507
Barley	centl.	420,432	142,948	383,103	291,636	228,707
	£	62,122,853	32,536,637	44,355,189	31,825,414	49,137,747
Wheat	centl.	34,613,713	17,187,388	20,785,414	14,629,899	20,336,199
	£	8,960,939	10,020,633	9,869,232	8,675,900	11,276,066
Flour	centl.	6,186,275	6,839,361	6,254,316	5,229,463	5,998,600
	£	1,605,236	4,127,120	1,292,301	3,051,227	3,988,837
Sugar (cane)	cwt.	2,091,379	5,253,156	1,679,523	3,968,631	5,222,198
	£	875,565	1,718,048	3,077,588	3,769,257	1,736,787
Wine	gal.	182,952	368,100	829,799	1,058,626	496,739
	£	13,823	17,539	14,101	13,656	16,780
Tobacco, manufactured	centl.	361,473	455,209	362,916	352,931	399,036
	£	8,148,941	8,274,355	8,547,198	9,896,827	9,280,898
Hides and skins	centl.	5,795,158	8,810,019	8,277,907	7,965,460	8,577,417
Wool (in terms of greasy wool)	centl.	63,258,555	63,203,415	60,053,358	66,095,901	61,612,995
	£	44,112	48,631	45,451	44,119	45,058
Pearl shell	cwt.	413,095	391,695	352,626	337,469	339,016
	£	133,283	164,702	172,309	128,248	189,403
Sandalwood	cwt.	205,477	252,807	252,491	193,222	278,238
	£	870,776	837,572	839,692	668,714	777,563
Tallow (unrefined)	cwt.	1,731,229	1,609,673	1,415,888	1,080,308	1,384,191
	ton	978,083	794,340	807,148	555,617	346,658
Coal	£	1,079,584	881,679	965,899	690,995	428,754
Concentrates	cwt.	4,852,819	5,885,004	2,504,583	6,432,199	3,944,942
	£	1,897,641	2,029,619	979,928	1,689,520	994,821
Copper	cwt.	75,980	95,672	83,045	146,473	131,991
	£	235,982	280,961	161,411	265,708	319,192
Lead	cwt.	2,355,075	2,608,991	2,591,327	3,276,400	2,892,551
	£	4,151,448	4,524,142	3,852,792	3,516,236	3,233,390
Zinc—bar, block, dust	cwt.	652,600	582,253	547,190	840,832	652,931
	£	1,149,735	1,070,202	932,491	1,231,752	913,191
Tin—Ingots	cwt.	32,558	35,816	37,206	30,235	25,634
	£	406,000	486,473	549,559	389,388	282,636
Leather	£	627,534	640,161	576,074	537,700	489,375
Timber, undressed, including Logs (a)	sup. ft.	128,851,412	112,101,049	123,669,022	97,964,091	91,190,142
	£	1,572,486	1,333,259	1,422,933	1,164,801	1,100,325
Soap	centl.	167,599	153,467	165,533	174,307	168,393
	£	303,166	289,239	291,346	310,695	297,937
Gold	£	944,739	4,318,072	11,367,771	2,804,249	2,958,137
Silver	£	1,120,565	1,155,355	935,230	934,623	934,198
All other articles	£	6,162,088	5,373,653	4,654,723	5,606,112	5,133,929
Total Exports (Australian Produce)	£	158,942,417	145,704,799	142,151,058	138,947,447	141,758,233

(a) Exclusive of undressed timber not measured in super. feet.

5. Imports of Merchandise, Specie and Bullion.—The table hereunder gives the value of imports into Australia during each of the last five years, grouped under the headings—Merchandise, and Specie and Bullion. The imports of merchandise are shown under the sub-headings of “free” and “dutiable” goods.

IMPORTS OF MERCHANDISE, SPECIE AND BULLION.—AUSTRALIA, 1924-25 TO 1928-29.

Year.	Merchandise.		Specie and Bullion.	Total Imports.
	Free Goods.	Dutiable Goods.		
	£	£	£	£
1924-25	49,827,415	96,773,074	10,542,807	157,143,296
1925-26	55,389,337	95,828,088	420,753	151,638,178
1926-27	59,188,128	104,939,631	588,835	164,716,594
1927-28	53,243,691	93,692,849	1,008,430	147,944,970
1928-29	53,607,067	89,674,382	366,432	143,647,881

6. Exports of Merchandise, Specie and Bullion.—The next table shows the value of exports from Australia during each of the last five years, grouped under the headings—Merchandise, and Specie and Bullion; giving the exports of Australian Produce and Other Produce separately.

EXPORTS OF MERCHANDISE, SPECIE AND BULLION.—AUSTRALIA, 1924-25 TO 1928-29.

Year.	Merchandise.		Specie and Bullion.		Total Exports. (a)
	Australian Produce.	Other Produce.	Australian Produce.	Other Produce.	
	£	£	£	£	£
1924-25	156,902,682	3,084,442	2,039,735	3,300	162,030,159
1925-26	140,269,075	3,013,440	5,435,724	53,695	148,771,934
1926-27	129,853,952	2,983,109	12,297,106	6,200	145,140,367
1927-28	135,217,349	4,254,973	3,730,098	10,650	143,213,070
1928-29	137,865,881	3,058,051	3,892,352	34,168	144,850,452

(a) Does not include the value of Ships' Stores. See later table.

7. Imports in Tariff Divisions.—In the following table the imports into Australia during the last five years have been classified in accordance with the sixteen divisions of the Customs Tariff 1921-30.

**IMPORTS CLASSIFIED ACCORDING TO DIVISIONS OF THE CUSTOMS TARIFF.—
AUSTRALIA, 1924-25 TO 1928-29.**

Tariff Division.	Imports.				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
I. Ale, Spirits, and Beverages ..	2,378,572	2,542,058	2,105,189	2,043,132	2,157,814
II. Tobacco and preparations thereof ..	2,410,190	2,760,176	2,704,754	2,960,620	2,694,546
III. Sugar ..	35,356	47,295	47,436	56,446	44,080
IV. Agricultural Products and Groceries ..	10,542,590	11,990,787	12,884,727	11,401,193	10,732,856
V. Textiles, Felts and Furs, and Manufactures thereof, and Attire ..	38,667,273	36,200,527	38,935,456	35,243,751	33,291,416
VI. Metals and Machinery	30,453,412	30,395,043	33,997,641	32,154,389	29,278,935
VII. Oils, Paints, and Varnishes ..	9,296,472	10,779,584	11,878,797	10,694,945	11,939,811
VIII. Earthenware, Cement, China, Glass, and Stone ..	3,260,919	3,443,166	3,458,945	3,396,286	3,221,320
IX. Drugs and Chemicals	2,716,011	2,907,140	3,234,162	3,238,754	3,253,824
X. Wood, Wicker, and Cane ..	5,046,136	5,911,637	5,514,674	5,815,279	4,877,474
XI. Jewellery and Fancy Goods ..	3,467,142	3,785,389	3,821,279	3,187,725	3,282,764
XII. Hides, Leather, and Rubber ..	3,857,376	6,179,311	6,116,816	4,650,108	3,433,966
XIII. Paper and Stationery	6,857,691	7,126,461	7,952,349	7,852,230	7,767,229
XIV. Vehicles ..	15,010,175	15,127,485	17,572,619	10,762,597	13,830,380
XV. Musical Instruments	1,373,312	1,241,344	1,452,955	962,576	648,261
XVI. Miscellaneous ..	8,344,792	7,627,608	9,094,214	8,576,785	9,186,039
— Free Goods not specially mentioned in Tariff ..	2,883,070	3,152,414	3,355,746	3,939,724	3,640,734
Total Merchandise	146,600,489	151,217,425	164,127,759	146,936,540	143,281,449
Specie and Bullion	10,542,807	420,753	588,835	1,008,430	366,432
Grand Total ..	157,143,296	151,638,178	164,716,594	147,944,970	143,647,881

§ 8. Excise.

While it does not come under the heading of oversea trade, the accompanying information in regard to Excise has been inserted here for purpose of convenience. The following table shows, in detail, the quantities of spirits, beer and tobacco on which Excise Duty was paid in Australia during each of the five years 1924-25 to 1928-29.

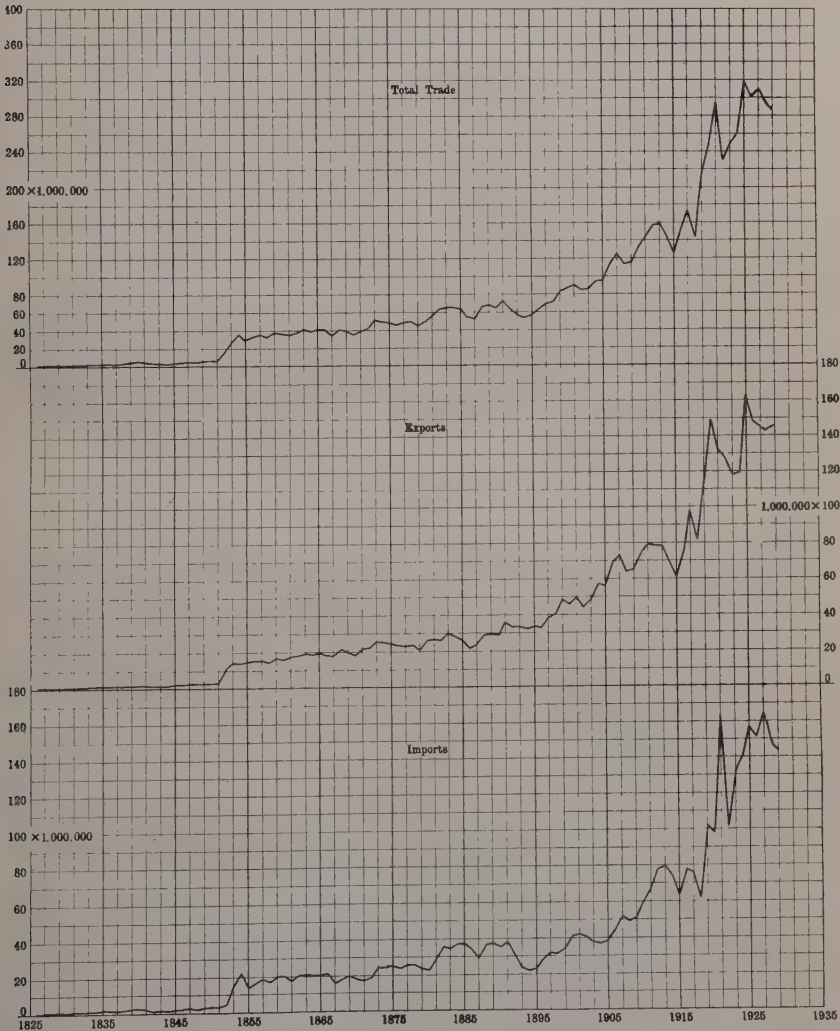
**QUANTITIES OF SPIRITS, BEER, AND TOBACCO ON WHICH EXCISE DUTY
WAS PAID.—AUSTRALIA, 1924-25 TO 1928-29.**

Article.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	proof gal.	proof gal.	proof gal.	proof gal.	proof gal.
Spirits—					
Brandy (Pure Australian Standard Brandy) ..	201,251	224,956	233,269	230,817	226,756
Brandy (Blended Wine Brandy, etc.) ..	8,944	2,699	1,670	1,224	831
Gin (Distilled from Barley, Malt, Grain, or Grape Wine, etc.) ..	47,948	50,821	51,469	48,429	59,136
Whisky (Australian Standard Malt Whisky) ..	127,251	183,622	204,060	206,922	217,372
Whisky (Australian Blended Whisky) ..	40	11	..	..	152
Rum (Australian Standard Rum) ..	511,917	557,611	552,401	550,211	518,176
Rum (Blended) ..	1,259	137	..	..	..
Liqueurs ..	333	312	1,041	163	358
Spirits, n.e.i. ..	169	448	2,144	1,759	923
Spirits for Industrial or Scientific Purposes ..	133,347	136,406	138,739	138,279	137,887
Spirits for Fortifying Wine (Distilled from Doradillo Grapes) (b) ..	(b) 457,784	597,903	542,934	406,489	248,263
Spirits for Fortifying Wine	730,944	928,796	998,005	797,258	571,399
Spirits for making Vinegar	52,799	70,486	60,389	43,303	45,005
Spirits for Manufacture of Scents, etc. (a) ..	28,173	33,787	38,194	36,173	36,109
Amylic Alcohol and Fusel Oil ..	52	31	31	25	55
Total, Spirits ..	2,302,211	2,788,026	2,824,346	2,461,052	2,062,422
Beer ..	gal. 64,939,563	gal. 67,372,272	gal. 70,105,029	gal. 70,755,600	gal. 71,160,596
Tobacco—Manufactured, n.e.i.	lb. 12,586,337	lb. 13,007,572	lb. 13,125,604	lb. 13,110,308	lb. 13,529,775
Tobacco—Hand-made ..	489,913	407,156	321,258	308,574	274,213
Tobacco—Fine-cut, suitable for Cigarettes ..	27,490	21,628	24,228	24,396	18,110
Total, Tobacco ..	13,103,740	13,436,356	13,471,090	13,443,278	13,822,098
Cigars—Machine-made ..	45,178	33,107	40,841	36,425	46,442
Cigars—Hand-made ..	429,158	406,664	390,990	348,002	291,842
Total, Cigars ..	474,336	439,771	431,831	384,427	338,284
Cigarettes—Machine-made ..	4,827,649	5,016,871	5,212,345	5,318,668	5,336,298
Cigarettes—Hand-made ..	27,762	28,415	19,046	6,939	4,807
Total Cigarettes ..	4,855,411	5,045,286	5,231,391	5,325,607	5,341,105
Snuff ..	50	100	..	..	..

(a) Liquid gallons.

(b) On and after 1st January, 1925.

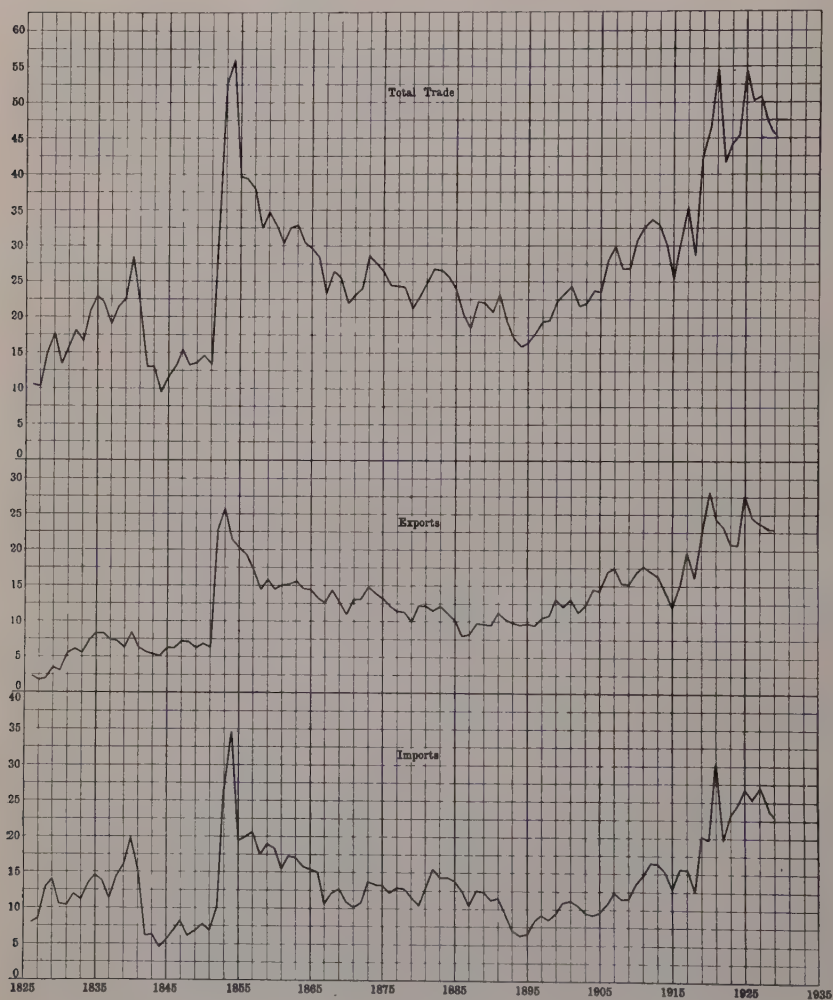
VALUE OF TOTAL TRADE, EXPORTS, AND IMPORTS, AUSTRALIA, 1826 TO 1928-29.



(See page 113.)

EXPLANATION.—The base of each square represents an interval of two years, and the vertical height ten million pounds sterling for imports and exports, and twenty million pounds sterling for total trade.

VALUES PER HEAD OF POPULATION OF TOTAL TRADE, EXPORTS AND IMPORTS
—AUSTRALIA, 1826 TO 1928-29.

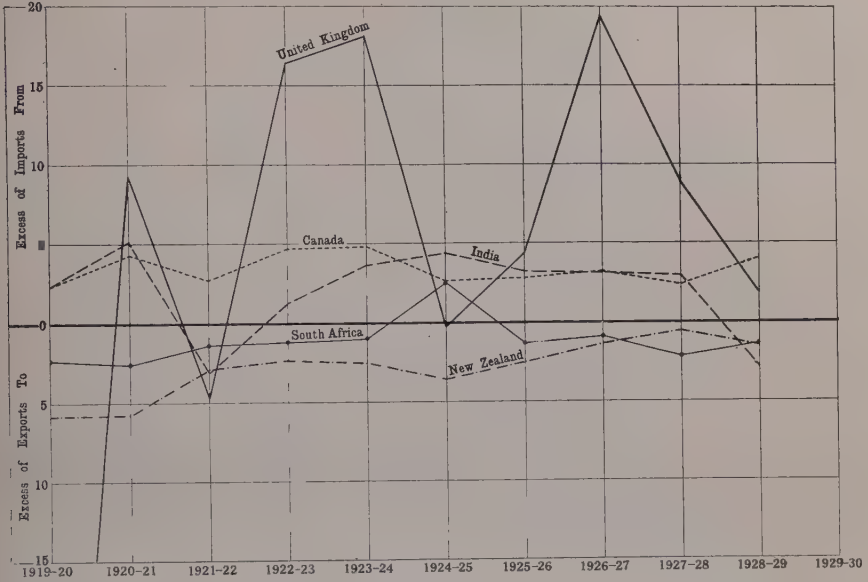


(See page 113.)

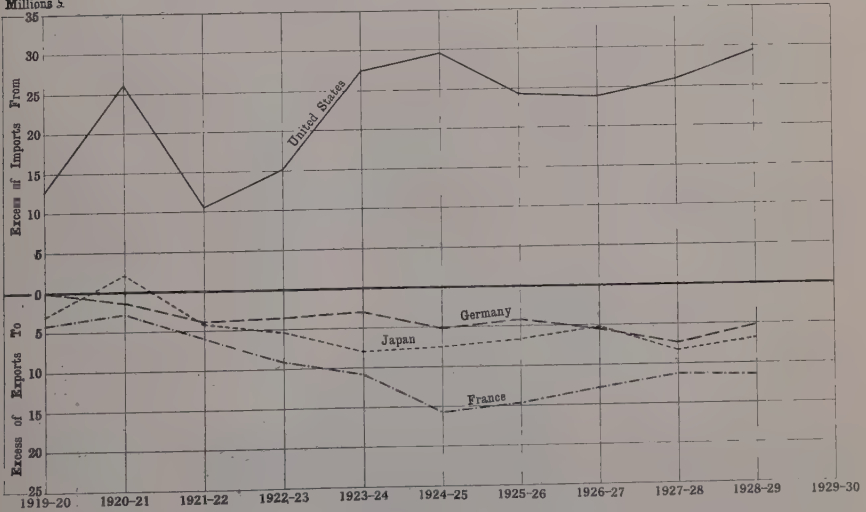
EXPLANATION.—The base of each square represents an interval of two years, and the vertical height £2 10s. 0d. per head of the population.

BALANCE OF AUSTRALIAN TRADE WITH OTHER COUNTRIES, 1919-20 TO 1928-29.

Millions £

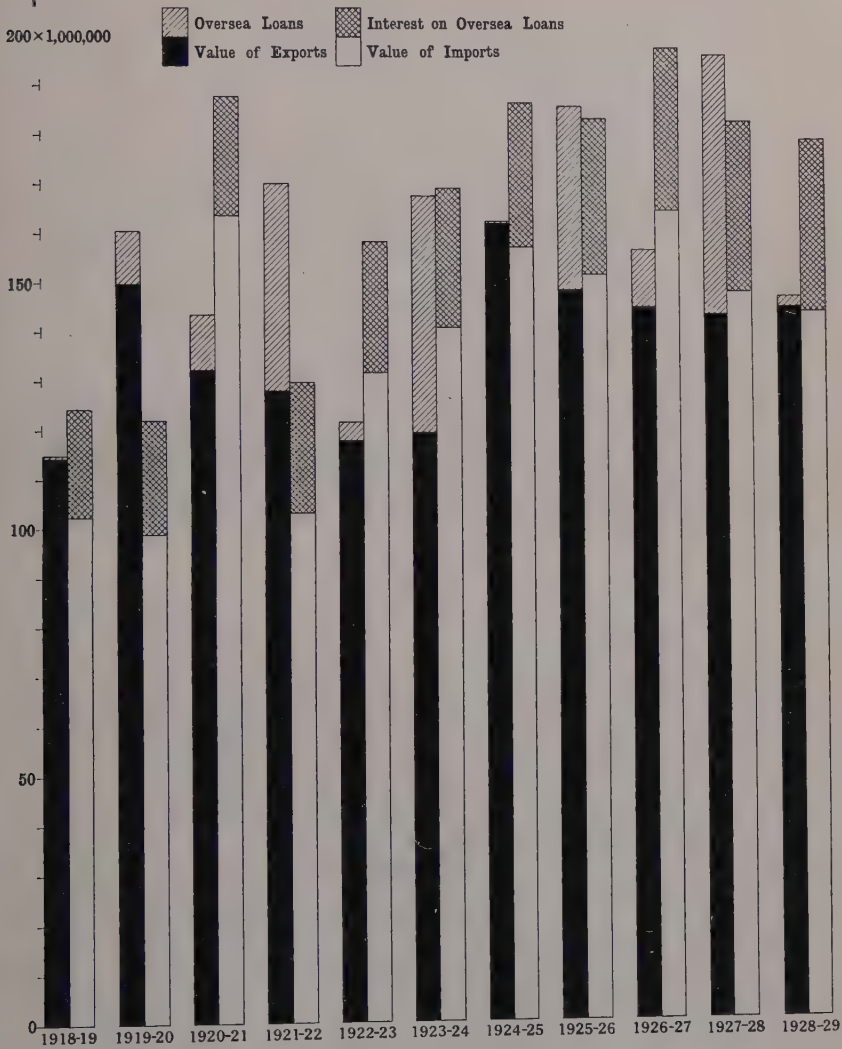


Millions £



EXPLANATION.—The base of each square or rectangle represents one year, and the vertical height five million pounds sterling.

VALUE OF IMPORTS AND EXPORTS, AMOUNT OF LOANS RAISED OVERSEA, AND
INTEREST PAYABLE OVERSEA—AUSTRALIA, 1918-19 TO 1928-29.



EXPLANATION.—Each vertical division of the scale represents £10,000,000. The key to the shading is given above on the graph.

Two columns are given for each year, one made up of the value of Exports and the amount of new loans raised overseas (i.e., the increase in net indebtedness); the other column consisting of the value of Imports, and the Interest on all overseas loans including services.

The first column represents items which make credit available abroad for the payments indicated in the second column. (See § 4. 2, page 114.)

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§ 9. Net Customs and Excise Revenue collected under the Divisions of the Tariff.

The following statement shows the net Customs and Excise Revenue collected in the Commonwealth under each Division of the Customs Tariff 1921-30 during the years 1924-25 to 1928-29 inclusive :—

NET CUSTOMS AND EXCISE REVENUE COLLECTED UNDER THE DIVISIONS OF THE TARIFF, 1924-25—1928-29.

Division.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
CUSTOMS.	£	£	£	£	£
1. Ale, Spirits, and Beverages	2,738,698	2,944,613	2,907,671	2,824,488	2,660,897
2. Tobacco, and Manufactures thereof	1,889,813	2,076,311	2,202,563	2,371,018	2,409,949
3. Sugar	10,321	20,154	20,098	16,823	11,553
4. Agricultural Products, and Groceries	1,118,759	1,287,979	1,547,448	1,402,145	1,272,314
5. Textiles, Felts, and Furs, etc.	5,524,608	5,180,743	6,237,294	5,805,203	5,361,904
6. Metals and Machinery	4,433,950	5,189,767	5,649,391	5,282,385	4,947,773
7. Oils, Paints, and Varnishes	792,620	951,095	2,172,342	2,593,612	3,091,281
8. Earthenware, Cement, China, etc.	654,301	688,705	734,704	704,112	710,100
9. Drugs and Chemicals	464,395	525,339	560,879	519,291	534,881
10. Wood, Wicker, and Cane	1,152,419	1,349,546	1,386,297	1,598,192	1,582,021
11. Jewellery and Fancy Goods	875,478	866,904	953,530	844,941	870,176
12. Leather and Rubber	1,576,017	1,770,476	1,574,832	1,125,936	746,899
13. Paper and Stationery	722,235	682,326	747,796	759,251	763,023
14. Vehicles	3,039,238	3,064,576	3,345,546	2,535,334	3,193,681
15. Musical Instruments	503,857	465,987	520,568	363,739	267,256
16. Miscellaneous	845,592	1,008,006	1,192,144	1,040,627	998,500
TOTAL, CUSTOMS DUTIES	26,342,301	28,072,527	31,753,103	29,787,097	29,422,208
EXCISE.					
Beer	5,642,087	5,848,257	6,104,384	6,155,381	6,191,276
Spirits	1,759,158	2,026,135	2,065,041	1,871,288	1,755,941
Starch	16,954	15,539	9,646	4,643	134
Tobacco	1,533,165	1,567,521	1,575,086	1,571,267	1,614,336
Cigars	65,474	60,703	59,617	51,859	46,404
Cigarettes	1,759,945	1,828,448	1,896,104	1,930,429	1,936,083
Snuff	10	20	..	..	..
TOTAL, EXCISE DUTIES	10,776,793	11,346,623	11,709,878	11,584,867	11,544,174
TOTAL, CUSTOMS AND EXCISE DUTIES	37,119,094	39,419,150	43,462,981	41,371,964	40,966,382
Miscellaneous Receipts—					
Customs	62,548	Dr. 234,106*	71,995	62,307	83,650
Excise	11,714	12,236	11,669	12,322	10,944
GRAND TOTAL	37,193,356	39,197,280	43,546,645	41,446,593	41,060,976

* Includes refunds of amounts previously paid into Revenue under the heading "Import Duties."

§ 10. Ships' Stores.

Prior to 1906 goods shipped in Australian ports on board oversea vessels as ships' stores were included in the general exports. From 1906, ships' stores have been specially recorded as such, and have been omitted from the export figures. The value of these stores shipped each year during the period 1906 to 1928-29, showing bunker coal separately, is given in the following table:—

VALUE OF STORES SHIPPED IN AUSTRALIAN PORTS ON OVERSEA VESSELS, 1906 TO 1928-29.

Period.	Bunker Coal.	All Stores (including Coal).	Period.	Bunker Coal.	All Stores (including Coal).
	£	£		£	£
1906	575,471	875,966	1917-18 ..	632,910	1,389,291
1907	663,724	998,897	1918-19 ..	857,507	1,765,367
1908	867,707	1,196,106	1919-20 ..	1,487,872	2,688,371
1909	781,113	1,071,677	1920-21 ..	2,027,133	3,560,648
1910	740,567	1,080,133	1921-22 ..	2,178,101	3,152,604
1911	858,783	1,238,446	1922-23 ..	1,988,890	2,887,399
1912	1,008,259	1,431,985	1923-24 ..	1,672,160	2,614,948
1913	1,018,595	1,458,702	1924-25 ..	1,485,957	2,714,562
1914 (1st six mths.)	533,288	771,581	1925-26 ..	1,331,789	2,773,422
1914-15 ..	829,875	1,587,757	1926-27 ..	1,421,927	2,781,312
1915-16 ..	719,510	1,544,872	1927-28 ..	1,306,225	2,601,034
1916-17 ..	748,852	1,676,116	1928-29 ..	1,009,163	2,316,116

§ 11. Exports according to Industries.

1. Classification.—The following table gives an analysis of the exports of Australian produce according to the main classes of industry in which the goods were produced.

EXPORTS OF AUSTRALIAN PRODUCE ACCORDING TO INDUSTRIAL ORIGIN.

VALUE OF EXPORTS AS RECORDED.

Industrial Group.			1913. (a)		1927-28.		1928-29.	
			£		£		£	
Agriculture .. ..	..	..	10,677,734	100	29,771,412	279	36,671,056	343
Pastoral .. ..	..	..	42,057,346	100	82,089,033	195	78,869,394	188
Dairy and Farmyard ..	..	..	3,854,734	100	8,623,108	224	9,700,842	252
Mines and Quarries ..	..	..	14,712,242	100	11,809,794	80	10,339,796	70
Fisheries .. ..	..	..	424,849	100	421,892	99	417,563	98
Forestry .. ..	..	..	1,106,549	100	1,443,109	130	1,448,045	131
Total Primary Produce ..			72,833,454	100	134,158,348	184	137,446,696	189
Manufacturing .. ..	..	..	2,304,693	100	4,789,099	208	4,311,537	187
Total			75,138,147	100	138,947,447	185	141,758,233	189

(a) Base year.

2. **Effect of Price Changes.**—If the effect of price changes be eliminated from the above figures by the application of the export price index-numbers, the relative quantitative results will be approximately as follows:—

EXPORTS OF AUSTRALIAN PRODUCE.—ELIMINATION OF PRICE CHANGES.

Industrial Group.	1913. (a)		1927-28.		1928-29.	
	£		£		£	
Agriculture	10,677,734	100	20,115,819	188	27,285,012	256
Pastoral	42,057,346	100	42,933,595	102	45,615,611	108
Dairy and Farmyard ..	3,854,734	100	5,802,899	151	6,178,880	160
Mines and Quarries ..	14,712,242	100	9,478,165	64	8,580,744	58
Fisheries	424,849	100	506,473	119	506,751	119
Forestry	1,106,549	100	837,556	76	853,287	77
Total Primary Produce ..	72,833,454	100	79,674,507	109	89,020,285	122
Manufacturing	2,304,693	100	2,595,718	113	2,486,469	108
Total	75,138,147	100	82,270,225	109	91,506,754	122

(a) Base year.

3. **Relative Importance of Industrial Groups.**—In the first of the two preceding tables the value of commodities in each industrial group of exports of Australian produce is that recorded at date of shipment from Australia, while in the second table the effect of price changes during the period has been taken into account. In the table showing exports according to recorded value the pastoral group was responsible for the highest proportion of exports during each year. In 1913 the value of commodities included in this group represented 55.97 per cent. of the total exports, as compared with 59.08 per cent. during 1927-28, and 55.63 per cent. during 1928-29. Wool constitutes the greater part of the exports in the pastoral group.

The value of minerals, etc., included in the mining group exceeded the value of items in the agricultural group during the year 1913, but the value of agricultural produce exported in 1928-29 was over twenty-six million pounds in excess of mineral exports which were four million pounds less in 1928-29 than in 1913. According to value, the agricultural group now ranks next to the pastoral group. Wheat and flour are the two items of export mainly responsible for this position. The agricultural group, which was equivalent to 21.43 per cent. of the total exports during 1927-28, increased to 25.87 per cent. in 1928-29.

The value of exports of dairy and farmyard produce increased from 6.21 per cent. during 1927-28 to 6.84 per cent. in 1928-29, due to an increase in the exports of butter. Exports included in the fisheries and forestry groups have not varied to a marked extent but the manufacturing group exports declined from 3.45 per cent. in 1927-28 to 3.04 in 1928-29.

The recorded value of exports for all industrial groups shows an increase of 85 per cent. during 1927-28 and 89 per cent. during 1928-29, as compared with the total value of exports during the year 1913. The effect of eliminating price changes during the period is shown in the second table. Higher prices of commodities in 1927-28 and 1928-29 inflated the value of exports during these years but, nevertheless, on the basis of prices ruling in 1913 the exports of 1927-28 and 1928-29 were greater than those of 1913, the increases for the respective years being 9 per cent. and 22 per cent. The effect of eliminating price changes is particularly noticeable in the figures for the individual groups. Agriculture made the greatest advance, the figure for 1928-29 revealing an increase of

156 per cent. on that of 1913. Dairy and farmyard came next in order with an increase of 60 per cent., followed by fisheries 19 per cent., pastoral 8 per cent., and manufacturing 8 per cent. Heavy declines occurred in mines and quarries 42 per cent. and forestry 23 per cent.

4. Australian Production and Exports according to Industry.—The following table shows the total value of Australian Production and Australian Exports during the period of ten years, 1919-20 to 1928-29, classified according to industries; the proportion of each industrial group to total production and to total exports; and in the last column the percentage exported of the production of each industrial group:—

VALUE OF AUSTRALIAN PRODUCTION AND EXPORTS, ACCORDING TO INDUSTRY, 1919-20 TO 1928-29.

Industrial Group.	Value of Production during Ten Years.	Percentage on Total Production.	Value of Exports during Ten Years.	Percentage on Total Exports.	Percentage Exported of the Production in each Industrial Group.
	£1,000,	%	£1,000.	%	%
Agriculture	900,663	22.01	340,238	25.16	37.78
Pastoral	1,077,872	26.34	719,068	53.16	66.71
Dairy and Farmyard	462,940	11.31	92,512	6.84	19.99
Mining	218,945	5.35	129,110	9.55	58.97
Forestry and Fisheries	116,044	2.84	19,222	1.42	16.56
Total Primary Produce	2,776,464	67.85	1,300,150	96.13	46.83
Manufacturing	1,315,733	32.15	52,300	3.87	3.97
Total	4,092,197	100.00	1,352,450	100.00	33.05

The figures relating to value of production and value of exports are subject to the qualifications mentioned in 2 *ante*. A period of ten years is embraced, and the values of production and of exports therein give a very fair index of the relative importance of the several industrial groups. Of the total production 67.9 per cent. was classified as primary produce and 32.1 per cent. as manufactured articles. The main contributing groups in the primary produce section were pastoral with 26.3 per cent., and agriculture with 22.0 per cent. of the total production.

Exports of primary produce represented 96.1 per cent. of the total exports. The pastoral group, with 53.2 per cent. of the total, shows the highest percentage, followed by the agricultural and mining groups with 25.2 per cent. and 9.6 per cent. respectively. Exports of goods classified in the manufacturing group represented only 3.9 per cent. of the total.

The figures in the last column of the table are of special interest, as they show the percentage exported of the production of each industrial group. Of the total primary production during the period 46.8 per cent. was exported. Over one-third of the agricultural production and two-thirds of the pastoral production were sent abroad.

Fifty-nine per cent. of the total production of the mining industry and 20 per cent. of the produce included in the dairy and farmyard group were exported.

The percentage of manufactured goods exported was comparatively small, only 4 per cent. of the production during the period being sent abroad.

§ 12. Movement of Specie and Bullion.

1. Imports and Exports.—The following tables show the value of gold and silver, specie and bullion, and of bronze specie imported and exported during the years 1924-25 to 1928-29:—

AUSTRALIAN IMPORTS AND EXPORTS, SPECIE AND BULLION, 1924-25
TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
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IMPORTS.

	£	£	£	£	£
Gold—Specie ..	2,585,875	65,790	81,278	539,532	502
Bullion ..	7,920,458	292,672	487,242	432,566	346,948
Total ..	10,506,333	358,462	568,520	972,098	347,450
Silver—Specie ..	33,546	58,833	16,578	30,778	13,932
Bullion ..	2,866	3,414	3,667	5,298	4,923
Total ..	36,412	62,247	20,245	36,076	18,855
Bronze—Specie ..	62	44	70	256	127
GRAND TOTAL ..	10,542,807	420,753	588,835	1,008,430	366,432

EXPORTS.

	£	£	£	£	£
Gold—Specie ..	784,944	4,006,382	10,763,242	2,197,297	2,915,797
Bullion ..	157,233	345,707	609,167	610,861	68,358
Total ..	942,177	4,352,089	11,372,409	2,808,158	2,984,155
Silver—Specie ..	16,033	63,966	19,760	52,007	33,327
Bullion ..	1,084,825	1,073,356	911,107	880,550	908,971
Total ..	1,100,858	1,137,322	930,867	932,557	942,298
Bronze—Specie ..	..	8	30	33	67
Total— Australian Produce ..	2,039,735	5,435,724	12,297,106	3,730,098	3,892,352
Other Produce ..	3,300	53,695	6,200	10,650	34,168
GRAND TOTAL ..	2,043,035(a)	5,489,419	12,303,306	3,740,748	3,926,520

(a) Includes premium on gold exported.

2. Imports and Exports by Countries.—The next table shows the imports and exports of specie and bullion from and to various countries during the year 1928–29.

AUSTRALIAN IMPORTS AND EXPORTS—SPECIE AND BULLION BY COUNTRIES, 1928–29.

Country.	Imports.			Exports.		
	Specie.	Bullion.	Total.	Specie.	Bullion.	Total.
	£	£	£	£	£	£
Australia (a) ..	7,368	..	7,368	..	..	..
United Kingdom ..	6,558	9,662	16,220	2,015,684	27,372	2,043,056
India and Ceylon ..	..	..	..	870,113	906,427	1,776,540
Malaya (British) ..	..	..	..	10,000	..	10,000
New Zealand ..	..	134,844	134,844	..	1,579	1,579
Pacific Islands—						
Fiji ..	..	..	..	20,575	491	21,066
Gilbert and Ellice Islands Colony..	..	..	..	18,545	..	18,545
Nauru ..	..	..	..	620	..	620
Solomon Islands ..	..	..	..	6,170	..	6,170
Territory of New Guinea ..	..	206,158	206,158	2,017	10	2,027
Papua ..	..	68	68	..	..	..
Other British Countries ..	..	114	114	..	..	..
Total British Countries ..	13,926	350,846	364,772	2,943,724	935,879	3,879,603
Austria ..	631	..	631	..	..	..
China ..	..	..	..	..	41,424	41,424
France ..	..	24	24	..	..	..
Pacific Islands : New Hebrides ..	..	..	..	4,900	..	4,900
United States of America ..	4	998	1,002	..	..	..
Other Foreign Countries ..	..	3	3	500	93	593
Total Foreign Countries ..	635	1,025	1,660	5,400	41,517	46,917
GRAND TOTAL ..	14,561	351,871	366,432	2,949,124	977,396	3,926,520

(a) Australian produce re-imported.

§ 13. Effect of Prices on Value of Exports.

1. General.—In comparing the value of exports from, and of imports into, any country for a series of years, the question naturally arises as to the extent to which any variation in the aggregate value is due to fluctuations in prices, or to increase or decrease of actual quantities, for, in aggregates expressed in value—the only possible method when the commodities differ—the two sources of variation are confused. The method of computation adopted has been dealt with in detail in previous issues of the Year Book.

2. Effect on Export Values.—The following table shows the value of total exports (Australian and other produce) as actually recorded in each year specified, together with the value computed on the assumption that the prices of 1901 were maintained. The

table also shows the yearly "price levels" based upon the results so ascertained, and furnishes a measure of the influence of prices on the value of exports in each year since 1901. Column IV.—values computed on 1901 prices—represents the volume of exports (less specie and gold bullion), expressed in the common denomination of value, and the figures therein show that, had the prices of 1901 remained constant, the value of the exports of merchandise during the year 1928-29, for example, would have been £68,884,363 only, instead of £141,832,903—the value actually recorded. The difference between these amounts (£72,948,540) results from a rise of 106 per cent. (i.e., from 1,000 to 2,059) in the prices of commodities for the period intervening between 1901 and 1928-29.

The column "Price levels" shows that prices as indicated by the exports rose from the beginning of the decade to the year 1906. Owing to the large proportion of the aggregate value of exports represented by wool and wheat, any change in the price of these commodities has a marked effect on the index-numbers for the total group of exports, and it is to their influence that the fall of prices in 1911 is mainly due. From that year to 1920-21 prices steadily increased, but there was a considerable decline during 1921-22. An upward trend was manifested during 1922-23, and the high prices realized for wool during 1923-24 and 1924-25 were responsible for the exceptional increase in the price levels of the pastoral group for those years, the index-number for 1924-25 reaching a level greatly in excess of any previous year. Prices were on a lower level in 1925-26 and 1926-27, and the price-level for the combined group of commodities in the latter year declined to 2,080, for which the lower price of wool was mainly responsible. In 1927-28 an upward trend in price-levels was apparent, but in 1928-29 prices declined to a level which was lower than that experienced in any of the previous five years, as the result of the fall in prices of wheat and wool. With the exception of the year 1923-24 the price level for agricultural produce in 1928-29 was lower than that for any year since 1916-17.

AUSTRALIAN EXPORTS.—VALUES AND PRICE LEVELS, 1901 TO 1928-29.

Year.	Exports of Specie and Gold Bullion.	Other Exports.		Total Exports (including Specie and Gold Bullion).		Price-Levels. (a) Year 1901 = 1,000.
		Values as Recorded.	Values Computed on Mass Prices of 1901.	Values as Recorded.	Values Computed on Mass Prices of 1901.	
I.	II. £	III. £	IV. £	V. £	VI. £	VII.
1901 ..	14,347,776	35,348,396	35,348,396	49,696,172	49,696,172	1000
1906 ..	16,895,059	52,842,704	42,005,330	69,737,763	58,900,389	1258
1911 ..	11,561,639	67,920,619	58,501,825	79,482,258	70,063,464	1161
1916-17 ..	11,521,815	86,433,667	43,985,398	97,955,482	55,507,213	1965
1917-18 ..	6,483,265	74,945,956	35,962,551	81,429,221	42,445,816	2084
1918-19 ..	7,252,202	106,711,774	52,489,805	113,963,976	59,742,007	2033
1919-20 ..	5,654,909b	144,168,600	64,103,424	149,823,509	68,516,379	2249
1920-21 ..	5,371,421b	126,787,491	56,249,996	132,158,912	60,330,722	2254
1921-22 ..	3,487,615b	124,358,920	72,259,686	127,846,535	75,225,164	1721
1922-23 ..	2,231,780b	115,638,367	56,713,275	117,870,147	58,818,605	2039
1923-24 ..	2,814,622b	116,672,542	47,121,382	119,487,164	49,742,586	2476
1924-25 ..	958,210b	161,071,949	57,464,127	162,030,159	58,373,048	2803
1925-26 ..	4,416,063	144,146,146	66,982,410	148,562,209	71,398,473	2152
1926-27 ..	11,392,199	133,502,984	64,184,127	144,895,183	75,576,326	2080
1927-28 ..	2,860,198	140,352,872	62,938,508	143,213,070	65,798,706	2230
1928-29 ..	3,017,549	141,832,903	68,884,363	144,850,452	71,901,912	2059

(a) These are index-numbers for the total group of exports, excluding specie and gold bullion.

b Including premium on gold exported 1919-20, £1,241,954, or 23.8 per cent. on standard price; 1920-21, £1,290,695, or 32.1 per cent.; 1921-22, £522,137, or 17.6 per cent.; 1922-23, £126,460, or 6.04 per cent.; 1923-24, £193,418, or 8.72 per cent.; 1924-25, £49,289, or 6.7 per cent.

3. **Price-Levels of Exports.**—The following table of index-numbers shows the variations in price of the different classes of goods exported, grouped according to industrial origin:—

AUSTRALIAN EXPORTS.—PRICE-LEVELS, 1901 TO 1928-29.

Year.	Agricultural Produce.	Pastoral Produce.	Dairy Produce.	Mineral Produce.(a)	Miscellaneous.	All Classes.(a)
1901	1,000	1,000	1,000	1,000	1,000	1,000
1906	1,155	1,344	1,021	1,113	991	1,258
1911	1,243	1,193	1,085	944	1,227	1,161
1916-17 ..	1,726	2,131	1,690	1,650	1,357	1,965
1917-18 ..	1,954	2,250	1,624	1,760	1,401	2,084
1918-19 ..	1,864	2,166	1,855	1,692	1,775	2,033
1919-20 ..	2,145	2,393	2,023	1,787	2,150	2,249
1920-21 ..	3,177	2,093	2,854	1,813	2,179	2,254
1921-22 ..	2,108	1,717	1,507	1,427	1,845	1,721
1922-23 ..	1,931	2,213	1,845	1,459	1,701	2,039
1923-24 ..	1,700	2,930	1,785	1,529	1,803	2,476
1924-25 ..	2,304	3,303	1,654	1,600	1,942	2,803
1925-26 ..	2,230	2,306	1,717	1,589	1,859	2,152
1926-27 ..	2,028	2,269	1,707	1,438	1,861	2,080
1927-28 ..	1,959	2,551	1,670	1,288	1,873	2,230
1928-29 ..	1,779	2,306	1,765	1,342	1,759	2,059

(a) Excluding gold.

§ 14. External Trade of Australia and other Countries.

1. **Essentials of Comparisons.**—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the system of record, are more or less identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may be added thereto. Again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices fixed from time to time by a commission constituted for the purpose. In later years, moreover, a very substantial difference in the value of imports would arise from the different methods of converting the moneys of foreign countries, i.e., from the application of current rates of exchange or of the mint par. Lastly, the figures relating to the external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represented, prior to the war, approximately 40 per cent. of the gross trade recorded; of Switzerland, 45 per cent.; of France, 20 per cent.; and of the United Kingdom, 15 per cent.; whereas in Australia the same element represents, normally, about 4 per cent., and in New Zealand even less.

2. **"Special Trade" of Various Countries.**—Special trade may be defined according to the interpretation of the British Board of Trade, as (a) imports entered for consumption in the country (as distinguished from imports for transshipment or re-export) and (b) exports of domestic products.

In the following table the figures relate as nearly as possible to imports entered for consumption in the various countries specified, and to exports of their domestic products. It is to be noted, however, that these figures do not invariably denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production. Nevertheless, a comparison of this character reveals approximately the

extent of the external trade which otherwise would not be manifest. The figures relating to foreign countries have been extracted from the League of Nations Memorandum on International Trade and Balance of Payments.

IMPORTS FOR HOME CONSUMPTION, AND EXPORTS OF DOMESTIC PRODUCTS (MERCHANDISE ONLY), VARIOUS COUNTRIES, 1928.

Country.	Trade.			Trade per Inhabitant.		
	Imports.	Exports.	Total.	Imports.	Exports.	Total.
	£1,000	£1,000	£1,000	£ s. d.	£ s. d.	£ s. d.
Australia(a) ..	139,389	137,866	277,255	21 19 11	21 15 2	43 15 1
United Kingdom ..	1,080,206	725,773	1,805,979	23 13 6	15 18 2	39 11 8
Canada ..	260,618	293,402	554,020	26 19 8	30 7 7	57 7 3
New Zealand ..	43,918	54,020	97,938	30 6 9	37 5 0	67 11 9
Union of South Africa (b) ..	74,433	92,783	167,216	9 11 5	11 18 7	21 10 0
United States of America ..	840,618	1,037,113	1,877,731	7 0 0	8 12 10	15 12 10
Argentine Republic ..	180,412	203,505	383,917	16 18 11	19 2 3	36 1 2
Belgium ..	182,825	172,990	355,815	22 17 4	21 12 9	44 10 1
Denmark ..	89,484	84,948	174,432	26 1 1	24 14 8	50 15 9
France ..	431,959	415,051	847,010	10 10 7	10 2 4	20 12 11
Germany ..	688,454	572,577	1,261,031	10 16 6	9 0 0	19 16 6
Italy ..	238,969	157,526	396,495	5 17 2	3 17 3	9 14 5
Japan ..	204,124	182,680	386,804	3 3 11	2 17 2	6 1 1
Norway ..	55,051	36,917	91,968	19 14 11	13 4 9	32 19 8
Sweden ..	94,433	87,010	181,443	15 10 3	14 5 10	29 16 1
Switzerland ..	105,361	83,918	189,279	26 8 6	21 0 10	47 9 4

(a) Year ended 30th June, 1929.

(b) Including Bullion and Specie.

§ 15. Trade of the United Kingdom with Australia compared with that of Competing Countries.

1. Proportion of Trade from United Kingdom and Competing Countries.—The failure of the United Kingdom to maintain the position formerly held in the import trade of Australia has been a matter of more than ordinary interest for some years. Since 1908 a permanent resident Commissioner appointed by the British Board of Trade has been established in Australia for the purpose of advising manufacturers and merchants in the United Kingdom with regard to Australian trade affairs. From the 8th August, 1907, the Commonwealth Customs Tariffs have provided preferential rates of Customs Duties on certain goods the produce or manufacture of the United Kingdom, with the object of assisting the British manufacturer to retain or improve his position in this market. The main provisions in these Acts relating to preference are dealt with on a previous page in this Chapter.

In an investigation into the relative position, as compared with other countries, occupied by the United Kingdom in the import trade of Australia, the comparison must, of course, be restricted to those classes of goods which are produced or manufactured in the United Kingdom. The imports to Australia include many commodities, such as tea, rice, raw coffee, unmanufactured tobacco, petroleum products, copra, timber, etc., which the United Kingdom could not supply. These items, in addition to others not available from that country, have, therefore, been omitted from the computation hereunder.

The imports into Australia have been classified under nine headings, and the trade of the United Kingdom therein is compared with that of France, Germany, Japan, and the United States. These countries have been selected as the principal competitors with the United Kingdom for the trade of Australia under the specified headings.

AUSTRALIAN IMPORTS.—PRODUCTS OF VARIOUS COUNTRIES, 1913 AND 1925-26 TO 1928-29.

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S. of America.	All Countries.
		£	£	£	£	£	£
Foodstuffs of animal origin	{ 1913 ..	301,025	3,093	12,071	6,988	289,220	947,697
	{ 1925-26	470,491	4,606	1,408	35,294	564,388	2,473,756
	{ 1926-27	519,771	5,423	3,289	63,233	653,399	3,099,383
	{ 1927-28	543,121	5,551	2,602	63,836	419,528	2,866,708
	{ 1928-29	563,780	4,670	2,619	101,843	488,882	2,367,393
Spirituous and alcoholic liquors	{ 1913 ..	1,227,561	343,394	143,426	1,689	2,305	1,947,243
	{ 1925-26	1,940,627	192,123	8,997	20	66	2,297,783
	{ 1926-27	1,444,151	205,596	8,584	16	3	1,815,612
	{ 1927-28	1,427,593	178,672	9,115	85	85	1,767,497
	{ 1928-29	1,548,720	189,731	7,649	69	67	1,876,944
Apparel, textiles, and manufactured fibres	{ 1913 ..	12,254,561	961,025	1,712,395	475,973	623,542	19,935,750
	{ 1925-26	23,386,529	2,016,927	678,253	3,358,478	2,135,120	39,055,392
	{ 1926-27	23,507,663	2,819,357	1,214,844	4,022,647	2,507,897	42,416,966
	{ 1927-28	21,668,829	2,274,573	1,344,316	3,286,503	2,430,423	38,488,491
	{ 1928-29	18,947,016	2,144,072	1,194,409	3,620,535	2,727,318	36,710,916
Metals, metal manufactures and machinery	{ 1913 ..	13,905,483	217,148	2,380,152	7,657	3,817,705	21,670,212
	{ 1925-26	24,087,735	416,369	713,815	32,787	16,675,170	45,498,649
	{ 1926-27	25,543,644	442,932	1,259,743	27,762	20,171,028	51,282,059
	{ 1927-28	23,580,677	252,298	1,301,313	19,932	15,235,464	42,801,886
	{ 1928-29	20,593,894	151,183	1,418,883	20,218	16,472,338	42,987,493
Paper and stationery	{ 1913 ..	1,789,577	21,930	266,483	10,656	403,679	3,134,750
	{ 1925-26	4,909,573	121,620	130,789	20,127	680,315	7,126,461
	{ 1926-27	5,035,992	161,923	197,501	20,010	714,200	7,936,028
	{ 1927-28	4,735,665	203,940	225,769	17,220	679,462	7,873,998
	{ 1928-29	4,689,952	156,192	221,447	20,457	744,437	7,778,529
Jewellery, time-pieces, and fancy goods	{ 1913 ..	521,290	88,070	263,688	19,307	138,217	1,442,292
	{ 1925-26	944,715	123,911	304,426	111,415	248,173	2,746,403
	{ 1926-27	913,971	115,002	393,943	114,259	309,317	2,849,587
	{ 1927-28	781,800	100,686	393,619	99,773	247,725	2,621,411
	{ 1928-29	745,533	103,615	430,623	101,251	234,998	2,658,148
Earthenware, cementa, glass, etc.	{ 1913 ..	650,188	40,245	453,188	21,493	62,887	1,565,727
	{ 1925-26	1,423,191	21,997	107,953	156,026	210,396	2,456,061
	{ 1926-27	1,522,386	43,534	147,281	155,286	221,180	2,610,987
	{ 1927-28	1,432,079	25,483	173,246	126,508	172,230	2,422,822
	{ 1928-29	1,400,213	34,721	192,494	148,560	170,096	2,455,467
Drugs, chemicals, and fertilizers	{ 1913 ..	1,020,647	245,426	304,179	139,178	210,758	2,721,902
	{ 1925-26	1,907,766	254,448	135,748	52,690	778,239	4,316,437
	{ 1926-27	2,092,824	280,227	231,468	47,662	1,000,132	5,027,176
	{ 1927-28	2,004,417	268,284	236,200	44,795	940,899	4,811,212
	{ 1928-29	1,888,486	327,529	281,381	55,452	933,344	5,213,338
Rubber and leather thereof and manufactures thereof and substitutes therefor	{ 1913 ..	485,216	68,686	347,045	688	433,837	1,717,035
	{ 1925-26	1,071,315	199,167	57,649	4,276	1,782,214	5,727,019
	{ 1926-27	1,126,592	212,953	78,173	7,949	1,383,284	5,593,757
	{ 1927-28	707,437	151,734	89,391	3,569	938,476	4,157,292
	{ 1928-29	558,855	124,684	98,736	1,835	633,750	2,943,661
Total above-mentioned imports	{ 1913 ..	32,155,493	1,989,017	5,982,627	683,629	5,982,659	55,082,613
	{ 1925-26	60,142,142	3,354,168	2,199,038	3,771,113	23,074,081	111,697,961
	{ 1926-27	61,706,949	4,295,952	3,534,831	4,458,824	26,960,440	122,631,560
	{ 1927-28	56,881,523	3,461,221	3,775,571	3,692,171	21,064,292	107,811,317
	{ 1928-29	50,936,448	3,236,397	3,848,241	4,076,220	22,405,230	104,991,829
Total imports (less bullion and specie)	{ 1913 ..	40,948,803	2,222,631	7,029,325	950,300	10,907,512	78,196,109
	{ 1925-26	65,824,179	3,758,529	2,821,789	4,372,083	37,235,485	151,217,425
	{ 1926-27	67,786,167	4,767,123	4,359,513	5,183,470	41,394,015	164,127,759
	{ 1927-28	62,676,412	3,876,897	4,621,419	4,282,614	35,005,221	146,936,540
	{ 1928-29	57,012,018	3,700,279	4,545,501	4,707,299	36,307,341	143,281,449

AUSTRALIAN IMPORTS.—PRODUCTS OF VARIOUS COUNTRIES.—PERCENTAGES,
1913 AND 1925-26 TO 1928-29.

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S. of America.	All Countries.
Foodstuffs of animal origin	1913 ..	31.77	0.33	12.74	0.74	30.52	100
	1925-26	19.02	0.19	0.06	1.43	22.82	100
	1926-27	16.77	0.17	0.11	2.04	21.08	100
	1927-28	18.95	0.19	0.09	2.23	14.63	100
	1928-29	23.81	0.20	0.11	4.30	20.65	100
Spirituous and alcoholic liquors	1913 ..	63.04	17.64	7.37	0.09	0.14	100
	1925-26	84.47	8.36	0.39	0.00	0.00	100
	1926-27	79.55	11.32	0.47	0.00	0.00	100
	1927-28	80.76	10.11	0.52	0.00	0.00	100
	1928-29	82.51	10.11	0.40	0.00	0.00	100
Apparel, textiles, and manufactured fibres	1913 ..	61.48	4.82	8.59	2.39	3.13	100
	1925-26	59.88	5.16	1.74	3.60	5.47	100
	1926-27	55.42	6.65	2.87	9.43	5.91	100
	1927-28	56.30	5.91	3.49	8.54	6.31	100
	1928-29	51.61	5.84	3.25	9.86	7.43	100
Metals, metal manufactures, and machinery	1913 ..	64.17	1.00	10.93	0.04	17.62	100
	1925-26	52.94	0.92	1.57	0.07	38.65	100
	1926-27	49.82	0.86	2.46	0.05	39.33	100
	1927-28	55.09	0.59	3.04	0.05	35.60	100
	1928-29	47.90	0.35	3.30	0.06	38.32	100
Paper and stationery	1913 ..	57.41	0.70	8.50	0.34	12.88	100
	1925-26	68.89	1.75	1.84	0.28	9.55	100
	1926-27	63.46	2.04	2.49	0.25	9.00	100
	1927-28	60.14	2.59	2.87	0.22	8.63	100
	1928-29	60.29	2.01	2.84	0.26	9.57	100
Jewellery, time-pieces, and fancy goods	1913 ..	36.14	6.11	13.28	1.34	9.58	100
	1925-26	34.40	4.51	13.26	4.06	9.04	100
	1926-27	32.07	4.04	13.82	4.01	10.86	100
	1927-28	29.82	3.84	15.02	3.81	9.45	100
	1928-29	28.05	3.90	16.20	3.80	8.84	100
Earthenware, cements, glass, etc.	1913 ..	41.52	2.57	28.94	1.37	4.02	100
	1925-26	57.95	0.90	4.40	6.35	8.57	100
	1926-27	58.31	1.67	5.64	5.95	8.47	100
	1927-28	59.11	1.05	7.15	5.22	7.11	100
	1928-29	57.02	1.41	7.84	6.05	6.93	100
Drugs, chemicals, and fertilizers	1913 ..	37.49	9.02	11.18	5.11	7.74	100
	1925-26	44.20	5.89	3.14	1.22	18.03	100
	1926-27	41.63	5.75	4.60	0.95	19.90	100
	1927-28	41.66	5.58	4.91	0.93	19.56	100
	1928-29	36.22	6.28	5.40	1.06	17.90	100
Rubber and leather and manufactures thereof, and substitutes therefor	1913 ..	28.26	4.00	20.21	0.04	25.27	100
	1925-26a	18.71	3.48	1.01	0.07	31.12	100
	1926-27a	20.14	3.81	1.40	0.14	24.73	100
	1927-28a	17.02	3.65	2.15	0.09	22.57	100
	1928-29a	18.98	4.24	3.35	0.06	21.53	100
Total above-mentioned articles	1913 ..	58.38	3.61	10.68	1.24	10.86	100
	1925-26	53.84	3.00	1.97	3.38	20.66	100
	1926-27	50.32	3.50	2.88	3.64	21.99	100
	1927-28	52.76	3.21	3.50	3.40	19.54	100
	1928-29	53.48	3.40	4.04	4.28	23.52	100
Total imports (less bullion and specie)	1913 ..	52.37	2.84	8.99	1.22	13.95	100
	1925-26	43.53	2.49	1.87	2.89	24.62	100
	1926-27	41.30	2.90	2.66	3.16	25.22	100
	1927-28	42.66	2.64	3.15	2.91	23.82	100
	1928-29	39.79	2.58	3.17	3.29	24.64	100

(a) The proportion of crude rubber in this group was large in this year.

The total value of the commodities included in the competitive classes increased from £55,082,613 during 1913 to £104,991,829 during 1928-29. The principal classes of goods in the latter year were—(a) metals, metal manufactures and machinery, £42,987,433;

and (b) apparel, attire, and manufactured fibres, £36,710,916. The value of goods included in these two groups represented 76 per cent. of the total value of competitive commodities during 1928–29.

Of the total value of competitive goods the United Kingdom supplied 53.48 per cent. during 1928–29, as against 58.38 per cent. during 1913, and 61.15 per cent. in 1922–23. In four of the nine competitive groups of imports, the proportion supplied by the United Kingdom increased during 1928–29 as compared with the previous year. The groups which showed reduced proportions were—apparel, textiles and manufactured fibres, metals, metal manufactures and machinery, earthenware, cements, glass, etc., jewellery, time-pieces and fancy goods, etc., and drugs, chemicals and fertilizers. The United Kingdom supplied Australia during 1928–29 with 82.51 per cent. of the total overseas purchases of spirituous and alcoholic liquors; 51.61 per cent. of apparel and attire; 60.29 per cent. of paper and stationery; 57.02 per cent. of earthenware, glassware, etc.; and 47.90 per cent. of metal manufactures and machinery.

The share of Japan in the competitive trade increased from 1.24 per cent. in 1913 to 4.28 per cent. in 1928–29. The most important classes of goods imported from Japan are as follows:—Apparel and textiles, earthenware, glass and glassware, brushware, and fancy goods.

The position of the United States of America in this competitive trade has improved from 10.86 per cent. in 1913 to 23.52 in 1928–29, the latter percentage being a considerable increase on that for the preceding year. In the latest pre-war year (1913) the value of goods from the United States in the “competitive” groups was £5,982,659, whereas in 1928–29 it was £22,405,230. The following are the principal groups of commodities in which United States sales to Australia during 1928–29 were greater than those of 1913:—Apparel and textiles, manufactured metals and machinery (including motor cars, chassis, etc.), paper and stationery, and drugs, chemicals, and fertilizers.

The position of France declined from 3.61 per cent. in 1913 to 3.40 per cent. in 1928–29. The proportion supplied by France has, however, not varied greatly, as the imports during the five years under review have represented rather more than 3 per cent. of the competitive trade. Apparel and textiles are the most important imports from France.

The proportion of the imports supplied by Germany in 1913 was 10.68 per cent. as compared with 58.38 per cent. from the United Kingdom; 3.61 per cent. from France; 1.24 per cent. from Japan; and 10.86 per cent. from the United States. From 1914–15 to 1921–22 imports from Germany were on a very small scale, but have increased steadily since the latter year. The percentage of the imports for 1928–29 was 4.04 per cent. as compared with 0.86 per cent. in 1923–24. The principal classes of imports from Germany were manufactured metals and machinery, and apparel and textiles.

Although the percentages for the total value of competitive goods increased in the year 1928–29 for all countries under consideration, yet on comparing the percentages of total imports from each country during 1927–28 and 1928–29 it will be noticed that the proportions supplied by the United Kingdom and France decreased, while those from Germany, Japan and the United States of America increased.

§ 16. Commonwealth Trade Representation in Overseas Countries.

The Commonwealth is represented in the United Kingdom by the High Commissioner for Australia (Maj.-Gen. Hon. Sir G. de L. Ryrie, K.C.M.G., C.B., V.D.), with headquarters at Australia House, London. Oversea trade matters affecting Australia come within the scope of the duties attaching to the office of High Commissioner.

The Commonwealth has a Trade Representative in France, with headquarters at Paris. This official is attached to the High Commissioner's office, London.

The first appointment of a Commissioner for Australia in the United States of America was made in 1918, and overseas trade matters come within the scope of the duties attaching to that office.

Early in 1921 a Commonwealth Trade Commissioner was appointed in China, with offices at Shanghai and Hong Kong. This office was terminated in 1923. In 1922, an Australian Trade Representative in the East was appointed, with headquarters at Singapore, but the appointment was terminated in March, 1925.

In April, 1929, a Commercial Representative for Australia was appointed in the Dominion of Canada. The functions of such office are to develop the sales of Australian products to Canada and generally to represent Australia in a commercial capacity in that Dominion.

§ 17. Value of Imports compared with Duty Paid.

In the following table the imports into Australia during the year 1928-29 are grouped according to the purposes for which they were imported, and a comparison is made between the value of imports and the amount of duty paid on goods cleared in each group. Although the duty is payable on the goods cleared and not on the goods imported, the difference between the total imports and clearances is not sufficiently large to affect appreciably the computation of the percentage of duty paid on each group.

IMPORTS INTO AUSTRALIA AND DUTY PAID, 1928-29.

Group.	Dutiable.			Free.	Total.		
	Value of Imports.	Duty paid.			Value of Imports.	Duty paid.	
		Amount.	Equiva- lent ad valorem.			Amount.	Equiva- lent ad valorem.
	£	£	%	£	£	£	%
Raw Material for use in Manufacture—							
(a) Unmanufactured tobacco ..	1,905,194	2,020,314	106.04	..	1,905,194	2,020,314	106.04
(b) Undressed timber ..	3,242,772	960,428	29.62	38,400	3,281,172	960,428	29.27
(c) Other ..	2,025,586	72,090	3.56	6,691,271	8,716,857	72,090	0.83
Goods for immediate consumption ..	103,550,073	24,988,061	24.13	13,882,329	117,432,402	24,988,061	21.27
Machinery, Plant and replacements ..	10,007,698	2,366,841	23.65	164,870	10,172,568	2,366,841	23.26
Other ..	963,180	10,642	1.17	870,076	1,773,256	10,642	0.60
Total ..	121,634,503	30,418,376	25.01	21,646,946	143,281,449	30,418,376	21.23
Bullion and Specie ..	..	..	..	366,432	366,432	..	..
Grand Total ..	121,634,503	30,418,376	..	22,013,378	143,647,881	30,418,376	..

§ 18. Interstate Trade.

With the exception of Western Australia and Tasmania, arrangements for collecting and compiling complete statistics of interstate trade are not in force in the several States of the Commonwealth. At the Conference of Statisticians held in January, 1928, it was resolved that efforts be made to collect data concerning the interstate movement of certain principal commodities. Many difficulties are associated with the recording of interstate trade in Australia, as the commodities are conveyed either by sea, railway, road or river.

The following tables, although incomplete in several respects, show the interstate movement of certain commodities for the years ended 30th June, 1928 and 1929.

**INTERSTATE TRADE.—IMPORTS INTO EACH STATE FROM THE OTHER STATES OF
THE COMMONWEALTH, 1927-28 AND 1928-29.**

Item.	Year.	Unit of Quantity.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Wheat	1927-28	cental	52,861	634,794	(a)	9,722	144	467,641
	1928-29	"	55,011	1,102,774	(a)	1,366	134	420,217
Flour	1927-28	"	153,574	187,040	(a)	126,806	22	101,001
	1928-29	"	164,886	225,568	(d) 2,643	100,532	1,042	121,072
Oats	1927-28	"	140,664	141,770	(a)	7,370	77	12,191
	1928-29	"	176,396	70,090	(d) 51,892	10,125	839	19,208
Butter	1927-28	cwt.	47,215	41,360	(a)	(a)	54,590	7,388
	1928-29	"	47,423	45,240	(a)	18,022	59,741	4,978
Cheese	1927-28	lb.	3,476,452	(a)	..	(a)	1,592,344	94,304
	1928-29	"	2,906,920	(a)	..	4,510	1,949,659	131,264
Wool	1927-28	"	9,765,684	69,805,120	(b) 2,222,066	20,033,738	952,309	3,113,856
	1928-29	"	9,836,964	71,677,760	(b) 2,638,984	17,896,577	151,836	1,525,992
Horses	1927-28	No.	10,910	(a)	(c) 8,086	788	2,555	354
	1928-29	"	11,779	(a)	(c) 26,838	418	2,396	410
Cattle	1927-28	"	379,055	119,653	(c) 42,107	43,205	11,030	85
	1928-29	"	218,866	105,979	(c) 56,759	54,986	13,823	28
Sheep	1927-28	"	1,628,941	2,074,462	(c) 989,327	296,451	63,362	33,760
	1928-29	"	1,283,591	2,260,837	(c) 723,635	321,553	34,742	24,134
Fruits— Fresh	1927-28	..	2,582,929 cases	481,286 ctls.	(a)	(a)	419 cntls.	106,705 cases
	1928-29	..	3,173,043	720,541	(e) 251,300 bbls.	(a)	618	122,066
Dried	1927-28	lb.	179,638	1,648,640	(a)	(a)	904,996	1,292,278
	1928-29	"	143,476	1,854,720	(d) 115,020	(a)	990,607	1,392,818
Coal	1927-28	ton	..	1,180,844	(a)	858,333	47,801	81,447
	1928-29	"	..	861,799	(a)	542,653	59,209	67,615

(a) Not available.
South Australia

(b) Imports from New South Wales.
(d) Imports from Tasmania.

(c) Imports from New South Wales and
(e) Imports from Western Australia and Tasmania.

**INTERSTATE TRADE.—EXPORTS FROM EACH STATE TO THE OTHER STATES OF
THE COMMONWEALTH, 1927-28 AND 1928-29.**

Item.	Year.	Unit of Quantity.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Wheat	1927-28	cental	1,328,548	252,986	(a)	1,366	6,499	9,785
	1928-29	"	1,625,032	397,376	(a)	338,887	368	9,299
Flour	1927-28	"	711,827	266,851	(a)	100,531	219	78,646
	1928-29	"	1,013,465	299,130	(a)	112,374	247	81,245
Oats	1927-28	"	13,786	137,580	(a)	878,371	15,887	296,165
	1928-29	"	2,640	223,389	(a)	1,049,619	22	177,522
Butter	1927-28	cwt.	55,491	65,200	30,447	18,022	5	19,597
	1928-29	"	44,874	51,200	55,228	6,341	6	29,115
Cheese	1927-28	lb.	2,688	(a)	2,850,417	4,510	14,187	429,938
	1928-29	"	54,796	(a)	2,956,951	732,400	5,397	469,504
Wool	1927-28	"	65,535,599	24,364,480	(b) 3,682,126	17,896,577	952,309	2,491,970
	1928-29	"	73,439,873	16,571,520	(b) 2,253,992	12,283,923	865,603	1,929,950
Horses	1927-28	No.	9,323	(a)	(b) 9,806	3,745	10	86
	1928-29	"	27,049	(a)	(b) 11,367	3,344	42	102
Cattle	1927-28	"	129,051	46,621	(b) 339,010	7,404	3,145	8,367
	1928-29	"	152,218	44,178	(b) 186,477	4,025	3,112	5,862
Sheep	1927-28	"	3,617,913	1,525,359	(b) 593,639	310,667	3,004	3,405
	1928-29	"	3,072,405	834,570	(b) 532,247	119,647	108	3,361
Fruits— Fresh	1927-28	..	500,642 cases	21,653 tons	1,458,079 bbls.	(a)	22,619 cntls.	1,325,225 bbls.
	1928-29	..	730,236	26,882 ..	1,732,944 ..	(a)	67,442	1,381,229 ..
Dried	1927-28	lb.	10,024	9,253,440	(a)	(a)	918,242	872,245
	1928-29	"	8,484	12,414,080	(a)	(a)	1,055,548	915,930
Coal	1927-28	ton	2,268,048	1,140	(a)	542,653	..	2
	1928-29	"	(a)	796	(a)	85,466	..	376

(a) Not available. (b) Exports to New South Wales and South Australia.

Efforts are being made to collect information concerning those items for which particulars were not available in the above tables for some States, and to obtain data also with respect to the interstate trade in other important commodities.

CHAPTER VII.

TRANSPORT AND COMMUNICATION.

A. SHIPPING.

§ 1. System of Record.

So far as oversea vessels are concerned the system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each voyage, without regard to the number of States visited.

On the arrival at, or departure from, a port in Australia, whether from or for an oversea country or from another port in Australia, the master or agent must "enter" the vessel with the Customs authorities at the port, and supply certain prescribed information in regard to the ship, passengers, and cargo. At the end of each month the information so obtained is entered on forms which are forwarded to the Commonwealth Bureau of Census and Statistics. These forms, which collectively provide a complete record of the movements of every vessel in Australian waters, furnish the material for the compilation of the Shipping and Migration Returns. The arrangement referred to has been in operation since the 1st July, 1924.

From the 1st July, 1914, the statistical year for the record of Trade and Shipping of Australia was altered from the calendar year to the fiscal year ending 30th June.

In all instances the tonnage quoted is net tonnage.

§ 2. Oversea Shipping.

1. Total Movement.—The following table gives the number and tonnage of oversea steam and sailing vessels entering Australian ports during the years 1924-25 to 1928-29 :—

TOTAL OVERSEA SHIPPING, ENTERED.—AUSTRALIA, 1924-25 TO 1928-29.

Year.	Steam.		Sailing.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
1924-25	1,675	5,535,871	51	60,529	1,726	5,596,400
1925-26	1,537	5,245,222	46	58,583	1,583	5,303,805
1926-27	1,598	5,512,840	26	46,030	1,624	5,558,870
1927-28	1,544	5,373,485	33	45,560	1,577	5,419,045
1928-29	1,564	5,521,725	18	29,858	1,582	5,551,583

The average tonnage of vessels entered has risen from 3,242 tons per vessel in 1924-25 to 3,509 tons in 1928-29.

Particulars regarding the total oversea movement of shipping for each year from 1822 to 1920-21 will be found in Official Year Book No. 15, p. 507.

2. **Shipping Communication with various Countries.**—In view of the defects in records purporting to show vessels and tonnage for particular countries (as pointed out on p. 265 of Official Year Book No. 17) it has been decided to restrict the statistics relating to the direction of shipping to and from Australia to the following tables in which countries situated on the main trade routes have been grouped. The grouping into larger geographical divisions to some extent avoids the limitations referred to, except in the case of Africa owing to its geographical situation as a place of call for vessels proceeding to or from other ports.

OVERSEA SHIPPING, AUSTRALIA.—DIRECTION, 1924-25 TO 1928-29.

Countries.	Cargo and Ballast.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
TONNAGE ENTERED.						
United Kingdom and European Countries	Cargo	1,797,322	1,815,268	1,834,752	1,939,468	1,759,576
	Ballast	186,256	21,444	31,267	3,950	35,563
New Zealand	Cargo	459,252	507,238	474,639	453,965	476,987
	Ballast	393,706	256,003	212,953	170,088	147,819
Asiatic Countries and Islands in the Pacific	Cargo	1,002,634	1,090,062	1,217,572	1,187,969	1,372,717
	Ballast	390,300	210,196	288,287	190,883	353,350
Africa	Cargo	26,709	23,070	16,540	34,325	57,453
	Ballast	145,216	66,494	91,582	55,595	75,807
North and Central America	Cargo	1,138,091	1,283,073	1,353,526	1,366,499	1,254,911
	Ballast	17,235	27,228	27,228	5,566	11,480
South America	Cargo	13,895	10,373	1,840	10,739	5,920
	Ballast	25,784	20,584	8,684	..	..
	Cargo	4,437,903	4,729,084	4,898,869	4,992,965	4,927,564
	Ballast	1,158,497	574,721	660,001	426,080	624,019
Total .. ..	..	5,596,400	5,303,805	5,558,870	5,419,045	5,551,583

TONNAGE CLEARED.

United Kingdom and European Countries	Cargo	2,786,002	2,344,201	2,543,362	2,416,656	2,313,817
	Ballast	8,097	17,590	15,224	..	..
New Zealand	Cargo	768,625	678,616	627,538	601,802	514,588
	Ballast	59,349	57,710	41,020	23,518	29,189
Asiatic Countries and Islands in the Pacific	Cargo	1,033,553	1,120,019	1,181,485	1,104,361	1,300,401
	Ballast	224,522	273,054	298,862	453,271	444,169
Africa	Cargo	174,697	154,250	155,300	159,238	122,965
	Ballast	14,020	3,418	16,425	2,722	672
North and Central America	Cargo	408,476	492,088	445,835	474,279	536,134
	Ballast	58,762	162,008	199,209	238,166	164,290
South America	Cargo	64,433	58,090	74,531	28,643	29,356
	Ballast	3,583	3,840	6,309	3,597	..
	Cargo	5,235,786	4,847,264	5,028,051	4,784,979	4,907,261
	Ballast	368,333	517,620	577,049	721,274	638,320
Total .. ..	..	5,604,119	5,364,884	5,605,100	5,506,253	5,545,581

3. **Nationality of Oversea Shipping.**—(i) *General.* The greater part of the shipping visiting Australia is of British nationality, though in 1927-28 the proportion of British tonnage, 73.39 per cent., was the lowest recorded since 1920-21, in which year the percentage was 69.69 per cent.

Particulars of the nationality of oversea shipping for the last five years are given in the following table:—

OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF VESSELS ENTERED,
1924-25 TO 1928-29.

Nationality.	Tonnage.				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
BRITISH—					
Australian	424,634	381,178	405,968	395,680	206,188
United Kingdom ..	3,209,865	2,967,317	3,097,888	3,011,435	3,286,445
Canadian	70,165	68,091	86,701	72,079	77,907
New Zealand	488,481	492,255	458,716	403,176	415,517
Other British	62,772	76,226	102,201	94,863	120,580
Cargo	3,418,124	3,549,627	3,704,196	3,637,889	3,703,435
Ballast	837,793	435,440	447,278	339,344	403,202
Total British	4,255,917	3,985,067	4,151,474	3,977,233	4,106,637
Per cent. on total ..	76.05	75.14	74.68	73.39	73.97
FOREIGN—					
Danish	43,311	85,152	61,376	61,311	34,016
Dutch	162,385	124,824	115,363	130,500	147,843
French	104,312	109,417	99,832	97,596	118,842
German	81,213	76,650	140,810	157,381	137,766
Italian	115,931	62,046	61,583	76,921	54,716
Japanese	297,657	246,193	210,486	168,323	286,607
Norwegian	219,258	264,037	302,958	284,036	255,270
Swedish	86,704	96,625	111,920	106,159	92,397
United States	186,089	205,391	231,468	341,263	289,228
Other Foreign	43,623	48,403	71,600	18,322	28,261
Cargo	1,019,779	1,179,457	1,194,673	1,355,076	1,224,129
Ballast	320,704	139,281	212,723	86,736	220,817
Total Foreign	1,340,483	1,318,738	1,407,396	1,441,812	1,444,946
Per cent. on total ..	23.95	24.86	25.32	26.61	26.03
Cargo	4,437,903	4,729,084	4,898,869	4,992,965	4,927,564
Per cent. on total ..	79.30	89.16	88.13	92.14	89.76
Ballast	1,158,497	574,721	660,001	426,080	624,019
Per cent. on total ..	20.70	10.84	11.87	7.86	11.24
Grand Total	5,596,400	5,303,805	5,558,870	5,419,045	5,551,583

The Australian tonnage which entered Australia from overseas during the year 1928-29 represented 3.71 per cent. of the total tonnage entered. This figure was less than the average for the quinquennium, which was 6.61 per cent., the decrease being due mainly to the disposal of vessels owned by the Commonwealth Government to foreign or other Australian owners, and the sale effected in April, 1928, of the five Bay liners and the freighters *Fordsdale* and *Ferndale* to the White Star Line.

(ii) *Proportion of British and Foreign with Cargo.* (a) *Tonnage of Vessels.* The relative proportions of British and foreign tonnage which entered Australia with cargo during the last five years are given in the next table. These figures may be considered to indicate more accurately the proportion of the actual carrying trade done than does the total tonnage.

**OVERSEA SHIPPING, AUSTRALIA.—PERCENTAGE BRITISH AND FOREIGN
ENTERED WITH CARGO, 1924-25 TO 1928-29.**

Nationality.				1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
British	..	..	..	77.02	75.06	75.61	72.86	75.16
Foreign	..	..	..	22.98	24.94	24.39	27.14	24.84
Total	..	..	..	100.00	100.00	100.00	100.00	100.00

During the period under review the average annual proportion of foreign tonnage entering with cargo was 24.90 per cent.

(b) *Tonnage of Cargo.* In Transport and Communication Bulletin, No. 21 (p. 37) published by this Bureau, a statement is given of the tonnage of oversea cargo discharged and shipped during the year 1928-29 according to the nationalities of the vessels engaged in the carrying trade.

While the tonnage of British vessels entering with cargo represented 75.16 per cent. of the total, the amount of cargo discharged from such vessels was 65.06 per cent. The foreign country which had the largest amount of shipping tonnage engaged with Australia during the year 1928-29 was United States of America, its vessels contributing 5.38 per cent. of the total tonnage entered with cargo and 6.74 per cent. of the total cargo discharged and 3.33 per cent. of the cargo shipped.

(iii) *Principal Foreign Countries Engaged.* The following table shows the tonnage entered and cleared in connexion with the principal foreign countries engaged in the oversea carrying trade of Australia:—

OVERSEA SHIPPING, AUSTRALIA.—FOREIGN TONNAGE, 1928-29.

Countries.	Nationality.							
	United States.		Norwegian.		Japanese.		German.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
EUROPEAN COUNTRIES—								
United Kingdom	..	..	8,543	18,631	..	4,293	..	..
Germany	..	..	..	28,488	..	..	70,910	110,795
Norway	..	..	28,123	50,135	..	..	21,323	..
Other European Countries	..	..	33,722	6,619	..	..	32,821	16,277
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—								
Netherlands East Indies	4,574	..	58,727	56,478	..	..	9,556	10,543
Japan	..	3,494	..	2,337	237,032	194,468	..	..
Straits Settlements	4,960	..	7,799	..	3,386	..	..	..
Other Asiatic Countries	24,909	38,083	14,400	18,480	12,759	79,969	..	..
New Zealand	..	4,555	3,481	9,666	1,221	..	..	..
Other Pacific Islands	..	12,667	28,660	17,287	11,967	5,026	..	..
AFRICAN COUNTRIES—	..	..	..	3,000	..	..	..	..
NORTH AMERICAN COUNTRIES—								
United States	254,785	222,716	69,946	30,944	20,242	..	3,156	3,637
Canada	..	..	1,869	..	..	..	..	..
SOUTH AMERICAN COUNTRIES—								
..	..	..	..	1,869	..	3,389	..	..
With Cargo	265,106	252,948	223,409	165,253	176,065	282,119	137,766	130,421
In Ballast	24,122	28,547	31,861	78,681	110,542	5,026	..	10,831
Total	289,228	281,495	255,270	243,934	286,607	287,145	137,766	141,252

(iv) *Nationality of Steam and Sailing Tonnage.* A further analysis is appended distinguishing between steam and sailing vessels of British and foreign nationality which entered Australia during the years 1924-25 to 1928-29.

OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF STEAM AND SAILING VESSELS ENTERED, 1924-25 TO 1928-29.

Description and Nationality of Vessels.	1924-25.		1925-26.		1926-27.		1927-28.		1928-29.	
	Ton-nage.	Per-cent-age.	Ton-nage.	Per-cent-age.	Ton-nage.	Per-cent-age.	Ton-nage.	Per-cent-age.	Ton-nage.	Per-cent-age.
Steam—										
British ..	4,242,511	77	3,972,307	76	4,146,144	75	3,972,733	74	4,103,691	74
Foreign ..	1,293,360	23	1,272,915	24	1,366,696	25	1,400,752	26	1,418,034	26
Total Steam ..	5,535,871	100	5,245,222	100	5,512,840	100	5,373,485	100	5,521,725	100
Sailing—										
British ..	13,406	22	12,760	22	5,330	12	4,500	10	2,946	10
Foreign ..	47,123	78	45,823	78	40,700	88	41,060	90	26,912	90
Total Sailing ..	60,529	100	58,583	100	46,030	100	45,560	100	29,858	100
Steam and Sailing—										
British ..	4,255,917	76	3,985,067	75	4,151,474	75	3,977,233	73	4,106,637	74
Foreign ..	1,340,483	24	1,318,738	25	1,407,396	25	1,441,812	27	1,444,946	26
Total ..	5,596,400	100	5,303,805	100	5,558,870	100	5,419,045	100	5,551,583	100

As would naturally be expected, there was a considerable decline in the figures for sailing tonnage during the period under review.

4. *Tonnage in Ballast.*—(i) *Total and Percentage by Nationality.* The following table shows the tonnage according to nationality of oversea vessels which entered and cleared Australia in ballast during the years 1924-25 to 1928-29:—

OVERSEA SHIPPING, AUSTRALIA.—TONNAGE IN BALLAST, 1924-25 TO 1928-29.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.

TOTAL TONNAGE.

1924-25 ..	837,793	320,704	1,158,497	164,972	203,361	368,333
1925-26 ..	435,440	139,281	574,721	309,398	208,222	517,620
1926-27 ..	447,278	212,723	660,001	415,806	161,243	577,049
1927-28 ..	339,344	86,736	426,080	482,617	238,657	721,274
1928-29 ..	403,202	220,817	624,019	481,796	156,524	638,320

PERCENTAGE.

1924-25 ..	19.68	23.92	20.70	4.41	10.93	6.57
1925-26 ..	9.15	10.56	10.84	7.63	3.88	9.64
1926-27 ..	10.77	15.11	11.87	10.04	11.03	10.29
1927-28 ..	8.53	6.02	7.86	11.87	16.57	13.10
1928-29 ..	9.82	15.28	11.24	11.68	11.02	11.51

(ii) *Tonnage entered in Ballast—States.* The tonnage which entered each State in ballast during 1928–29 was as follows:—

OVERSEA TONNAGE IN BALLAST ENTERING STATES, 1928–29.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Tonnage ..	204,719	85,455	17,960	88,908	204,671	6,056	16,250	624,019
Percentage on total ..	32·81	13·69	2·88	14·25	32·80	0·97	2·60	100·00

In normal times the large exports of coal from New South Wales afford special inducements to vessels in search of freights. The tonnage in ballast into New South Wales is mainly for coal cargo, into Victoria for wheat, into South Australia for wheat and ores and into Western Australia for timber and wheat.

§ 3. Shipping of Ports.

The total shipping tonnage—oversea, interstate, and coastwise—which entered the more important ports of Australia during the year 1928–29, together with similar information in regard to some of the ports of New Zealand for the year 1928 and of Great Britain for the year 1928, will be found in the next table:—

SHIPPING OF PORTS, AUSTRALIA, NEW ZEALAND, AND THE UNITED KINGDOM.

Port.	Tonnage Entered.	Port.	Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Sydney	9,060,153	London	27,741,734
Melbourne	6,883,317	Liverpool (inc. Birkenhead)	16,342,617
Adelaide	4,509,470	Southampton	12,112,339
Newcastle	3,714,670	Tyne Ports	10,236,924
Brisbane	3,407,525	Cardiff	8,754,975
Fremantle	3,387,758	Plymouth	6,971,539
Townsville	1,068,551	Hull	5,813,903
Kembla	834,739	Manchester (inc. Runcorn)	4,030,082
Hobart	742,378	Swansea	3,735,244
Geelong	729,567	Sunderland	3,294,683
Pirie	655,470	Bristol	3,305,286
Cairns	603,811	Newport	3,235,768
Albany	570,980	Middlesbrough	3,167,509
Mackay	495,650	Blyth	2,201,162
Burnie	368,735	Grimsby (inc. Immingham)	2,124,926
Whyalla	366,434	Beaumaris (inc. Holyhead)	2,101,751
Launceston	360,336	Dover	1,824,956
Thursday Island	343,597	Falmouth	1,603,905
Bowen	328,451		
Bunbury	302,619		
Rockhampton	297,915	SCOTLAND—	
Devonport	277,639	Glasgow	6,053,733
NEW ZEALAND—		Leith	2,143,330
Wellington	3,477,149		
Auckland	2,401,911	NORTHERN IRELAND—	
Lyttelton	1,900,483	Belfast	5,220,175
Otago	993,298		

Transport and Communication Bulletin No. 21 gives more detailed information regarding the shipping entered at Australian ports.

§ 4. Vessels Built and Registered.

1. **Vessels Built.**—The following table shows the number and tonnage of vessels built in Australia during each of the calendar years 1925 to 1929, so far as such information can be ascertained from the Shipping Registers of the various States. The Merchant Shipping Act, under which vessels are registered in Australia, does not, however, make it compulsory to register vessels under 15 tons burthen if engaged in river or coastal trade. Larger vessels are also exempt from registration if not engaged in trade. Yachts and small trading vessels may be, and frequently are, registered at the request of the owners. As the Shipping Registers are the source of information, it follows that the figures given below will be subject to additions in the future, inasmuch as vessels already built may be added to the register at some future date.

VESSELS BUILT IN AUSTRALIA, 1925 TO 1929.

NUMBER.

Year.	Steamers built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Com-posite.	Total.				
1925 ..	..	..	6	..	6	23	1	..	30
1926 ..	1	..	..	..	1	9	..	..	10
1927 ..	..	..	1	..	1	5	1	..	7
1928 ..	1	..	..	..	1	12	4	..	17
1929 ..	..	..	..	..	..	7	2	..	9

TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1925 ..	4,074	1,478	329	258	13	13	..	..	4,416	1,749
1926 ..	36	27	144	91	..	..	..	..	180	118
1927 ..	6	5	86	56	3	3	..	..	95	64
1928 ..	8	10	174	141	46	44	..	..	228	195
1929 ..	..	..	207	172	17	14	..	..	224	186

2. **Vessels Registered.**—The following table shows the number and net tonnage of steam, sailing, and other vessels on the registers of the States and of the Northern Territory on the 31st December, 1929 :—

VESSELS ON THE STATE REGISTERS, 31st DECEMBER, 1929.

VESSELS OF THE STATE REGISTERED

States and Territory.	Steam.				Sailing.				Barges, Hulks, Dredges, etc., not Self-propelled.		Total.	
	Dredges and Tugs.		Other.		Fitted with Auxiliary Power.		Other.					
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.
New South Wales ..	55	1,635	410	76,139	253	3,417	231	11,087	49	12,741	998	105,019
Victoria ..	41	4,475	142	155,366	50	2,645	45	803	68	29,255	346	192,544
Queensland ..	19	2,750	50	5,327	40	574	98	1,477	32	4,405	239	14,533
South Australia ..	16	527	80	19,653	50	3,176	31	649	46	7,462	223	31,467
Western Australia ..	9	173	28	6,412	19	428	305	4,605	22	5,899	383	17,517
Tasmania ..	6	478	45	3,594	65	1,674	68	2,591	2	563	186	8,900
Northern Territory ..	..	..	..	..	1	17	19	189	..	..	20	206
Total ..	146	10,038	755	266,491	478	11,931	797	21,401	219	60,825	2,395	370,186

Particulars of the number of vessels on the registers classified according to tonnage will be found in the Transport and Communication Bulletin issued by this Bureau.

§ 5. Interstate Shipping.

1. **System of Record.**—*Interstate Shipping* comprises two elements, viz.:—(a) Vessels engaged solely in interstate trade; and (b) Vessels trading between Australia and overseas countries and in the course of their voyage proceeding from one State to another. (It should be mentioned that these vessels, except under special circumstances, do not now engage in interstate carrying.) A detailed explanation of the methods adopted in dealing with the returns under each heading will be found on page 272 of Official Year Book No. 17, but limitation of space precludes its repetition in the present volume.

2. **Vessels and Tonnage Entered.**—The following table gives the number and tonnage of vessels recorded as having entered each State from any other State during each of the years 1924–25 to 1928–29. The shipping on the Murray River, between the States of New South Wales, Victoria, and South Australia is not included.

INTERSTATE SHIPPING.—NUMBER AND TONNAGE OF VESSELS ENTERED, 1924–25 TO 1928–29.

States and Territory.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
NUMBER.					
New South Wales ..	1,902	1,759	2,022	1,856	1,723
Victoria ..	1,815	1,743	1,870	1,815	1,704
Queensland ..	460	452	487	463	455
South Australia ..	798	838	949	852	730
Western Australia ..	421	337	366	382	339
Tasmania ..	1,091	1,024	1,014	1,052	950
Northern Territory ..	24	20	24	29	33
Total ..	6,511	6,173	6,732	6,449	5,934

TONNAGE.					
New South Wales ..	4,581,395	4,244,524	4,626,263	4,204,347	4,103,542
Victoria ..	3,593,320	3,394,123	3,787,217	3,511,614	3,416,924
Queensland ..	1,041,754	1,011,106	1,056,045	1,074,291	1,106,905
South Australia ..	2,348,566	2,391,535	2,725,309	2,462,588	2,238,706
Western Australia ..	1,900,077	1,648,977	1,778,919	1,879,446	1,663,818
Tasmania ..	1,098,556	1,161,672	1,171,857	1,242,260	853,982
Northern Territory ..	57,658	51,760	62,663	61,746	59,048
Total ..	14,621,326	13,903,697	15,208,273	14,436,292	13,442,925

3. **Overseas Vessels Moving Interstate.**—To ascertain the aggregate movement of shipping between the States during the year 1928–29, including the total interstate movements of overseas vessels, the figures in the following table, which give the number

and tonnage of vessels entered from or cleared for oversea countries via other Australian States, must be added to those in the table preceding :—

SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA OTHER AUSTRALIAN STATES, 1928-29.

States and Territory.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ..	579	2,728,625	492	2,419,839	1,071	5,148,464
Victoria ..	563	2,672,741	483	2,325,628	1,046	4,998,369
Queensland ..	235	1,247,337	225	1,221,908	460	2,469,245
South Australia ..	363	1,897,678	280	1,510,098	643	3,407,776
Western Australia ..	88	311,057	9	27,980	97	339,037
Tasmania ..	61	348,593	72	424,575	133	773,168
Northern Territory ..	..	..	..	..	..	..
Total ..	1,889	9,206,031	1,561	7,930,028	3,450	17,136,059

Oversea vessels moving interstate are with few exceptions not engaged in the active interstate trade of Australia, but are merely proceeding to the several States in continuation of their oversea voyage.

4. Vessels engaged Solely in Interstate Trade.—Eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade for Australia as a whole during the years 1924-25 to 1928-29 were as follows :—

NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1924-25 TO 1928-29.

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1924-25	4,909	6,960,923	4,906	6,953,546
1925-26	4,690	6,677,578	4,628	6,622,175
1926-27	5,129	7,303,603	5,146	7,422,571
1927-28	4,824	6,316,106	4,865	6,447,495
1928-29	4,373	5,512,897	4,383	5,611,354

5. Total Interstate Movement of Shipping.—(i) *Australia.* The appended table shows the total inward interstate movement of shipping for each of the years 1924-25 to 1928-29 :—

TOTAL INWARD INTERSTATE MOVEMENT OF SHIPPING, 1924-25 TO 1928-29.

Vessels.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate ..	15,856,487	15,001,432	16,777,917	17,079,249	17,136,059
Vessels solely interstate ..	6,960,923	6,677,578	7,422,571	6,447,495	5,611,354
Total ..	22,817,410	21,679,010	24,200,488	23,526,744	22,747,413

(ii) *States.* The following table shows the number and tonnage of vessels which entered and cleared each State during 1928-29, including the coastal movements of oversea vessels:—

INTERSTATE SHIPPING OF EACH STATE, 1928-29.

States and Territory.	Entered.		Cleared.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	2,302	6,832,167	2,275	6,823,778
Victoria	2,267	6,089,665	2,300	6,245,652
Queensland	690	2,354,242	720	2,468,666
South Australia	1,093	4,136,384	1,152	4,259,122
Western Australia	427	1,974,875	356	1,693,237
Tasmania	1,011	1,202,575	1,009	1,198,426
Northern Territory	33	59,048	21	58,532
Total, Australia	7,823	22,648,956	7,833	22,747,413

6. *Interstate and Coastal Services.*—The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each of the years 1925 to 1929:—

AUSTRALIAN INTERSTATE AND COASTAL STEAMSHIP SERVICES, 1925 TO 1929.

Particulars.	1925.	1926.	1927.	1928.	1929.
Number of companies making returns	41	44	40	38	29
Number of steamships	209	216	212	201	181
Tonnage { Gross	384,004	375,893	398,894	371,142	360,459
Net	216,390	214,028	214,703	208,083	202,749
Horse-power (Nominal)	38,750	37,129	39,545	37,980	37,911
Number of passengers { 1st class	9,110	8,686	7,909	7,686	7,983
for which { 2nd class and steer-licensed	4,204	3,650	3,438	3,240	1,755
Complement { Masters and officers	684	691	698	638	588
of Crew { Engineers	645	642	662	630	598
Crew	5,190	5,102	5,176	4,922	4,710

§ 6. Tonnage of Cargo.

The table hereunder shows the aggregate tonnage of oversea cargo discharged and shipped in Australian ports, and the tonnage of interstate cargo shipped in all ports for the years 1925-26 to 1928-29. Cargo which was stated in cubic feet has been converted to weight on the basis of 40 cubic feet to the ton.

AUSTRALIAN SHIPPING.—CARGO MOVEMENT, 1925-26 TO 1928-29.

Year.	Oversea Cargo.				Interstate Cargo.	
	Discharged.		Shipped.		Shipped.	
	Tons Weight.	Tons Meas.	Tons Weight.	Tons Meas.	Tons Weight.	Tons Meas.
1925-26 ..	2,730,700	2,611,921	4,281,068	888,339	5,006,918	729,055
1926-27 ..	3,097,467	2,857,745	4,313,286	932,855	5,764,631	1,031,525
1927-28 ..	3,346,604	2,542,523	3,739,525	946,781	5,090,116	1,134,972
1928-29 ..	3,596,936	2,470,493	4,529,232	759,813	4,381,692	1,168,601

More detailed information regarding the volume of trade at each of the principal ports is contained in Transport and Communication Bulletin No. 21 issued by this Bureau.

§ 7. World's Shipping Tonnage.

The table hereunder shows the number and gross tonnage of steam and motor, and of sailing vessels owned by the most important maritime countries, together with the proportion of the grand total owned by each country :—

WORLD'S SHIPPING TONNAGE, 1st JULY, 1929.

Nationality.	Steam and Motor.		Sailing.		Total.		Percentage on Total.	
	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.
Great Britain and Nthn. Ireland	7,783	20,046,270	389	120,061	8,172	20,166,331	25.71	30.92
Australia and New Zealand	603	668,753	16	9,729	619	678,482	1.95	1.04
Canada(a) ..	614	932,328	194	88,243	808	1,020,571	2.54	1.56
Other British ..	748	886,847	217	49,819	965	936,666	3.03	1.44
Total, British Empire ..	9,748	22,534,198	816	267,852	10,564	22,802,050	33.23	34.96
Belgium ..	240	522,618	4	6,425	244	529,043	0.77	0.81
Denmark ..	623	1,032,744	78	23,123	701	1,055,867	2.20	1.62
France ..	1,478	3,302,684	184	75,979	1,662	3,378,663	5.23	5.18
Germany ..	2,105	4,057,657	22	34,895	2,127	4,092,552	6.69	6.28
Greece ..	516	1,266,685	..	..	516	1,266,685	1.62	1.94
Holland ..	1,320	2,932,420	19	6,647	1,339	2,939,067	4.21	4.51
Italy ..	1,105	3,215,327	275	69,333	1,380	3,284,660	4.34	5.04
Japan ..	2,059	4,186,652	..	..	2,059	4,186,652	6.48	6.42
Norway ..	1,792	3,217,795	15	6,698	1,807	3,224,493	5.68	4.94
Spain ..	782	1,136,326	95	25,265	877	1,161,591	2.76	1.78
Sweden ..	1,259	1,480,189	126	29,936	1,385	1,510,125	4.86	2.31
United States of America(a) (b)	3,089	11,141,148	718	798,936	3,807	11,940,084	11.98	18.31
Other Foreign Countries ..	2,838	3,622,854	485	223,891	3,323	3,846,745	10.45	5.90
Total, Foreign Countries ..	19,206	41,115,099	2,021	1,301,128	21,227	42,416,227	66.77	65.04
Grand Total ..	28,954	63,649,297	2,837	1,568,980	31,791	65,218,277	100.00	100.00

(a) Sea-going.

(b) Including Philippine Islands.

The foregoing figures have been compiled from Lloyd's Register of Shipping, and vessels of 100 tons or upwards only have been included.

§ 8. Ferries.

1. **New South Wales.**—The ferry services in Port Jackson are under the control of three companies, which during the year 1929 had 65 vessels in commission, 62 of which were double-ended screw steamers, the remaining three being motor driven. It is claimed for the steamers that they are superior in size and equipment to boats employed on similar service in any other part of the world.

2. **Victoria.**—The Williamstown City Council owns one steamer which is engaged in the transport of passengers between Port Melbourne and Williamstown. There are several other steamers which are engaged during the summer season in the carriage of passengers and goods to the several seaside resorts. Particulars of these services, however, are not included in the table in sub-par. 6 following.

3. **Queensland.**—The Brisbane City Council and the Balmoral Shire Council control the ferry services in the Metropolitan area, but such ferries are really substitutes for bridges and have therefore not been included in the table hereunder.

4. **Western Australia.**—The ferries plying on the Swan River during 1929 were operated by a private company, and consisted of 9 petrol-driven vessels. At South Perth the Western Australian Government employed 3 vessels, 1 of which was a steamer.

5. **Tasmania.**—In and around Hobart there were in 1929, 4 ferry services, 2 being controlled by private companies which had 3 steamers in commission, 1 by the Public Works Department with 2 motor-propelled vessels, and 1 by the Railway Department with 1 steamer.

6. **Particulars of Working.**—The subjoined table shows for the year 1929, so far as returns are available, the most important items in connexion with the operation of the ferry services in the several States:—

FERRIES.—PARTICULARS OF WORKING, 1929.

Particulars.	New South Wales.	Victoria.	Western Australia.	Tasmania.	Total.
Boats in Service—					
Steam .. No.	62	1	1	4	68
Other .. No.	3	..	11	2	16
Total .. No.	65	1	12	6	84
Number of passengers which boats are licensed to carry .. No.	46,631	342	1,688	1,431	50,092
Revenue .. £	833,669	3,573	17,527	19,806	874,575
Working Expenses .. £	638,000	7,838	15,938	24,382	686,158
Passengers carried (b) No.	49,534,261	190,000	1,456,452	1,047,321	52,228,034
Mileage of Boats .. miles	(a)	9,100	95,596	104,494	(c)209,190
Accidents—					
Killed .. No.	..	..	..	..	..
Injured .. No.	131	..	..	..	131
Employees—					
Salaried Staff .. No.	89	..	3	8	100
Wages Staff .. No.	1,050	10	29	36	1,125

(a) Not Available.

(b) Approximate.

(c) Incomplete.

7. **Other Services.**—In addition to the foregoing there are throughout the several States a number of row-boat ferry services, and on many of the principal inland rivers punts are in operation.

§ 9. Miscellaneous.

1. **Lighthouses.**—Transport and Communication Bulletin No. 14, published by this Bureau, contains a list of the principal lighthouses on the coast of Australia, giving details of the location, number, colour, character, period, candle-power, and visibility of each light so far as particulars are available.

2. **Distances by Sea.**—A statement giving the distances by sea between the ports of the capital cities of Australia and the most important ports in other countries which trade with Australia was also included in Transport and Communication Bulletin No. 14.

3. **Shipping Freight Rates.**—The Quarterly Summary of Australian Statistics gives a list of the ruling freight rates for general merchandise both in respect of oversea and interstate shipments. The latest figures available, which give the rates current at 30th June, 1930, show that the rate for general merchandise from Australia to United Kingdom and Continent was 63s. per ton weight or measurement, as compared with 55s. per ton in 1915.

4. **Depth of Water at Main Ports.**—A table compiled from information supplied by the Director of Navigation showing the depth of water at the main ports of Australia at 1st January, 1930, has been included in the Transport and Communication Bulletin No. 21, published by this Bureau.

5. **Shipping Casualties.**—Courts of Marine Inquiry are constituted by a Magistrate assisted by skilled assessors, and when necessary are held at the principal port in each State and at Launceston (Tasmania). Such courts have power to deal with the

certificates of officers found to be at fault. Particulars of shipping casualties reported on or near the coast during the year 1928-29 are shown in the Transport and Communication Bulletin No. 21. This information has also been furnished by the Director of Navigation.

6. Commonwealth Navigation and Shipping Legislation.—(i) *General.*—An account in some detail, of the Commonwealth Navigation and Shipping Legislation was published in Official Year Book No. 17 (pp. 1053-5), but considerations of space preclude its repetition in the present volume.

(ii) *Amending Acts.* Under the provisions of the Navigation Act 1926 (March, 1926) permission may be granted by the Governor-General in Council in certain specified circumstances to unlicensed British ships to engage in passenger tourist traffic between any specified Commonwealth ports. Certain vessels were granted permission to engage in the carriage of passengers between the port of Hobart and the ports of Brisbane, Sydney, and Melbourne during the period 6th March, 1926, to 31st May, 1926, and between the 1st January, 1927, and 31st May, 1927. This permission may be renewed from time to time as occasion demands. The Navigation Act 1925 (July, 1925), conferred authority for the suspension, for any specified time, if in the opinion of the Governor-General in Council such is expedient in the public interest, of the operation of the provisions of that part of the principal Act relating to the engagement of ships in the coasting trade by exempting under certain circumstances any ship or class of ships from compliance with any specified provision or provisions of the Act.

7. Ports and Harbours.—A report in two volumes on *Transport in Australia*, with special reference to Ports and Harbours facilities, has been submitted to the Commonwealth Government by Sir George Buchanan, and published as a Parliamentary Paper, but the subject-matter is too voluminous to be dealt with in this present volume.

B. RAILWAYS.

§ 1. General.

1. Introduction.—In the following pages statistics relating to State-owned lines are, in the main, dealt with separately from those under the control of the Commonwealth Government. The State railways are referred to throughout as "State" and the Commonwealth railways as "Federal" railways.

2. Improvement of Railway Statistics.—Earlier issues of the Year Book contain a condensation of the report issued in 1909 by the Commonwealth Statistician to the Minister for Home Affairs on the subject of *The Desirability of Improved Statistics of Government Railways in Australia* (see Year Book No. 7, page 598).

Considerable improvement, both as regards the volume of information and the mode of presentation thereof in the statistical tables appearing in the reports of the several Railways Commissioners, has been made during recent years.

3. Railway Communication in Australia.—An account of the progress of railway construction in Australia since the opening of the first line in 1854 will be found in Year Book No. 6, p. 681. Further information regarding railway communication in Australia and proposals for unification of gauge in the various systems are given in Year Book No. 22, pp. 259 to 261, but considerations of space preclude its repetition in the present issue.

4. Mileage Open for Traffic, all Lines.—(i) *General.* In all the States the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of Australia, lines have been constructed and managed by private companies, but at the present time nearly the whole of the railway traffic

is in the hands of the State or Commonwealth Governments. A large proportion of the private lines has been laid down for the purpose of opening up forest lands, mining districts, or sugar areas, and these lines are not generally used for the conveyance of passengers or the public conveyance of goods.

The subjoined table shows the route mileage of Federal, State, and private lines open for general traffic (exclusive of sidings and cross-overs) in each State for each of the years 1924-25 to 1928-29. The railway mileage given for each State includes both Federal, State, and private railways in that State :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE OPEN, 1925 TO 1929.

State or Territory.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales ..	5,799.65	5,883.85	5,892.07	6,008.99	6,082.25
Victoria ..	4,508.56	4,652.21	4,659.16	4,721.69	4,723.95
Queensland ..	6,404.39	6,542.39	6,603.59	6,619.14	6,720.91
South Australia ..	3,560.91	3,608.31	3,637.01	3,636.42	3,821.29
Western Australia ..	4,463.65	4,595.37	4,649.04	4,707.62	4,809.47
Tasmania ..	864.56	865.00	845.86	841.06	827.26
Federal Capital Territory ..	4.94	4.94	4.94	4.94	4.94
Northern Territory ..	198.68	198.68	198.68	198.68	264.84
Australia ..	25,805.34	26,350.75	26,490.35	26,738.54	27,254.91

In previous issues of the Year Book particulars were given for different periods from 1855 onwards. (See No. 15, p. 537.)

(ii) *Government and Private Lines Separately.* The next table shows for each State (a) the length of lines owned by the State Government, and by the Commonwealth Government in that State, all of which lines are open for general use by the public and (b) the length of private lines available for general use by the public. The mileages specified in the case of Government and private lines are to the 30th June, 1929 :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE CLASSIFIED, 1928-29.

State or Territory.	Government Lines—		Private Lines available for General Traffic.	Total Open for General Traffic.
	State.	Federal.		
	Miles.	Miles.		
New South Wales ..	5,940.22	..	142.03	6,082.25
Victoria ..	4,699.01	..	24.94	4,723.95
Queensland ..	6,447.18	..	273.73	6,720.91
South Australia ..	2,541.63	1,245.86	33.80	3,821.29
Western Australia ..	4,078.48	453.99	277.00	4,809.47
Tasmania ..	653.45	..	173.81	827.26
Federal Capital Territory ..	..	4.94	..	4.94
Northern Territory ..	..	264.84	..	264.84
Australia ..	24,359.97	1,969.63	925.31	27,254.91

5. Comparative Railway Facilities.—The mileage of line open to the public for general traffic (including both Government and private lines) is shown in the subjoined statement in relation to population and area respectively :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—COMPARISON OF FACILITIES, 1929.

Particulars.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Fed. Cap. Ter.	Nor. Ter.	Aust.
Mileage of Railway— Per 1,000 of popu- lation ..	2.47	2.67	7.25	6.60	11.68	3.89	0.59	63.51	4.28
Per 1,000 sq. miles of Territory ..	19.66	53.75	10.02	10.05	4.93	31.56	5.26	0.51	9.16

6. Classification of Lines according to Gauge, 1928-29.—The next table gives a classification, according to gauge, of the total mileage, exclusive of sidings and crossovers of (i) Federal railways, given in the State or Territory in which situated; (ii) State railways; and (iii) Private railways open to the public for general traffic. Particulars of Government railways are up to the 30th June, 1929, and of private railways open for general traffic to the 31st December, 1928, as nearly as possible.

RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1928-29.

State or Territory in which situated.	Route mileage having a gauge of—						Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	3 ft. 0 in.	2 ft. 6 in.	2 ft. 0 in.	

FEDERAL RAILWAYS.

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
South Australia	597.86	648.00	..	..	..	1,245.86
Western Australia	453.99	..	..	..	..	453.99
Federal Capital Territory	4.94	..	..	..	..	4.94
Northern Territory	264.84	..	..	..	264.84
Total	1,056.79	912.84	..	..	..	1,969.63

STATE RAILWAYS.

New South Wales .. ..	..	5,900.71	39.51	..	..	..	5,940.22
Victoria	4,577.24	..	..	..	121.77	..	4,699.01
Queensland .. ..	..	..	6,416.92	..	..	30.26	6,447.18
South Australia	1,463.63	..	1,078.00	..	..	..	2,541.63
Western Australia .. ..	..	..	4,078.48	..	..	..	4,078.48
Tasmania .. ..	..	..	628.62	..	..	24.83	653.45
Total	6,040.87	5,900.71	12,241.53	..	121.77	55.09	24,359.97

PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.

New South Wales .. ..	..	78.97	36.73	..	..	26.33	142.03
Victoria	13.94	..	..	11.00	..	..	24.94
Queensland .. ..	..	..	101.43	..	7.00	165.30	273.73
South Australia .. ..	..	..	33.80	..	..	..	33.80
Western Australia .. ..	..	..	277.00	..	..	..	277.00
Tasmania .. ..	..	..	157.32	..	..	16.49	173.81
Total	13.94	78.97	606.28	11.00	7.00	208.12	925.31

RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1928-29—*continued.*

State or Territory in which situated.	Route mileage having a gauge of—						Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	3 ft. 0 in.	2 ft. 6 in.	2 ft. 0 in.	
ALL RAILWAYS OPEN FOR GENERAL TRAFFIC.							
New South Wales .. ..	..	5,979.68	76.24	..	..	26.33	6,082.25
Victoria	4,591.18	..	..	11.00	121.77	..	4,723.95
Queensland .. ..	..	..	6,518.35	..	7.00	195.56	6,720.91
South Australia	1,463.63	597.86	1,759.80	..	..	..	3,821.29
Western Australia .. ..	..	453.99	4,355.48	..	..	..	4,809.47
Tasmania .. ..	..	..	785.94	..	..	41.32	827.26
Federal Capital Territory ..	..	4.94	..	..	..	..	4.94
Northern Territory .. ..	..	..	264.84	..	..	..	264.84
GRAND TOTAL	6,054.81	7,036.47	13,760.65	11.00	128.77	263.21	27,254.91

7. **Track Mileage—Government Railways.**—The following table gives the track mileages of all Government railways and sidings, exclusive of Tasmania, for the years ended 30th June, 1926 to 1929, classified according to gauge, together with the percentages on the total :—

RAILWAYS, FEDERAL AND STATE.—TRACK MILEAGE(a), 1926 TO 1929.

Gauge.	At 30th June—							
	1926.		1927.		1928.		1929.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
5 ft. 3 in. ..	7,427.27	25.05	7,465.59	24.95	7,812.26	25.77	7,847.13	25.41
4 ft. 8½ in. ..	8,710.62	29.37	8,749.82	29.24	8,896.10	29.34	8,998.12	29.14
3 ft. 6 in. ..	13,353.87	45.03	13,543.00	45.26	13,445.80	44.35	13,865.95	44.91
2 ft. 6 in. ..	131.56	0.44	131.56	0.44	131.87	0.43	131.87	0.43
2 ft. 0 in. ..	33.00	0.11	33.00	0.11	33.00	0.11	33.00	0.11
Total	29,656.32	100.00	29,922.97	100.00	30,319.03	100.00	30,876.07	100.00

(a) Exclusive of Tasmania.

§ 2. Federal Railways.

1. **General.**—On the 1st January, 1911, the Commonwealth Government took over the Northern Territory from the South Australian Government, and at the same time the railways from Darwin to Pine Creek in the Northern Territory, and from Port Augusta to Oodnadatta in South Australia, came under its control. Subsequently the construction of a transcontinental line from Port Augusta in South Australia to Kalgoorlie in Western Australia was undertaken by the Commonwealth Government, while a line has been constructed in the Federal Capital Territory, connecting Canberra with the New South Wales railway system at Queanbeyan. In 1917 an Act was passed by which all the Federal railways were vested in a Commonwealth Railways Commissioner.

2. **North Australia Railway.**—(i) *Darwin to Katherine.* On the 1st January, 1911, the line from Darwin to Pine Creek came under the jurisdiction of the then Department of External Affairs, and was worked under the Administrator of the Northern Territory. As mentioned above, the management of this railway is now vested in the Commonwealth Railways Commissioner.

In the Northern Territory Acceptance Act the construction of a transcontinental line from South Australia is provided for. The extension of the line from Pine Creek to Katherine River was completed, and the first train ran through to Emungalan (Katherine River) on 13th May, 1917.

(ii) *Proposed Extension.* The recommendations of the Parliamentary Standing Committee on Public Works in connexion with the North-South line were indicated in a previous issue of this work. (See Year Book No. 18, p. 278.)

(iii) *Line Authorized for Construction.* The Northern Territory Railway Extension Act 1923 provides for the construction of a 3 ft. 6 in. gauge line from the present terminus at Emungalan to Daly Waters, a distance of approximately 160 miles. The estimated cost of this line is £1,545,000, including the cost of a bridge over the Katherine River which was completed in May, 1926, although the first train crossed on 21st January, 1926. The terminus of the line was moved to the new station at Katherine River on 14th December, 1926. Tenders were then called for the construction of the line from Katherine River to Daly Waters, but, as no satisfactory tender was received, it was decided to do the work by day labour. Under this system, construction proceeded rapidly until December, 1927, when, owing to a reduction in the amount of money to be made available for construction during the year 1927-28, a drastic curtailment of operations was made. The work then proceeded at a limited rate, and, on 1st July, 1928, a further section, to Mataranka (264 miles 67 chains from Darwin) was opened for public traffic. Owing to the need for the curtailment of loan expenditure, the Government then decided not to proceed with construction work beyond Birdum (316 miles 20 chains from Darwin), and at 30th June, 1929, this section was nearing completion.

3. Central Australia Railway.—(i) *General.* This line was taken over by the South Australian Government until 31st December, 1913. From the 1st January, 1914, the line was worked under agreement by the South Australian Government for and on behalf of the Commonwealth, but from 1st January, 1926, the management devolved upon the Commonwealth Railways Commissioner.

(ii) *Extension Authorized.* The Railways (South Australia) Agreement Act 1926, assented to by the Commonwealth Parliament in February, 1926, ratified the agreement between the Commonwealth and South Australian Governments for the construction of a 3 ft. 6 in. gauge line between Port Augusta and Alice Springs. This involves the construction of an extension to Alice Springs of the existing 3 ft. 6 in. gauge line from Port Augusta to Oodnadatta. The estimated cost, exclusive of rolling stock, of the proposed extension, which comprises 292 miles is £1,700,000. The first section 21½ miles from Oodnadatta was completed on the 29th August, 1927. The contract for the construction of the balance of 270½ miles to Alice Springs was signed on the 11th August, 1927. The contract provided for the completion of the railway to Alice Springs by the 30th June, 1929, but it was not until 2nd August, 1929, that the completed line was taken over for public traffic.

4. Federal Capital Territory Railway.—Queanbeyan-Canberra.—This line was built by the Railway Construction Branch of the Public Works Department, New South Wales, and, when completed, was taken over by the Chief Commissioner of Railways for that State, who worked the line for and on behalf of the Commonwealth Government until 1st July 1928, on which date the management was taken over by the Commonwealth Railways Commissioner. The line was opened for departmental goods traffic on 25th May, 1914. It connects with the New South Wales railway system at Queanbeyan, is 4.94 miles in length, and has sidings of an aggregate length of 2.00 miles.

5. Trans-Australian Railway (Kalgoorlie to Port Augusta).—In the issue of the Year Book for 1918 (No. 11, pp. 663 to 666 and p. 1213), a short history of the construction of the Trans-Australian line is given, also a description of the country through which the line passes between Kalgoorlie and Port Augusta.

On the 22nd October, 1917, the first through train left Port Augusta with an official party on board for Kalgoorlie. It should be mentioned that owing to deviations from the original route, the length of this line was reduced from 1,063.39 miles to 1,051.85 miles, a saving of 11.54 miles.

6. **Lines Open, Surveyed, etc.**—The following table shows the lines open for traffic under the control of the Commonwealth Government at 30th June, 1929, together with the lines which have been or are being surveyed :—

RAILWAYS, FEDERAL, 30th JUNE, 1929.

Terminals.	Miles.
OPEN FOR TRAFFIC.	
Trans-Australian—Port Augusta (South Australia) to Kalgoorlie (Western Australia)	1,051.85
Central Australia Railway—Port Augusta (South Australia) to Rumbalara (Central Australia)	648.00
Queanbeyan to Canberra (Federal Capital Territory)	4.94
North Australia Railway—Darwin to Mataranka	264.84
Total opened for traffic	1,969.63
SURVEYED OR BEING SURVEYED.	
Mataranka to Daly Waters (Northern Territory)	95.00
Kingoonya to Boorthanna (South Australia)	176.44
Oodnadatta to Alice Springs	115.00
Canberra to Jervis Bay (Federal Capital Territory)	140.22
Canberra (Federal Capital Territory) to Federal Capital Territory Border in the direction of Yass (New South Wales)	11.67
Daly Waters (Northern Territory) to Alice Springs (South Australia)	559.50
Port Augusta to Crystal Brook (South Australia)	69.25
Port Augusta—Red Hill—Adelaide	188.98
Total surveyed or being surveyed	1,356.06

In addition the following trial surveys were undertaken on behalf of the North Australia Commission, viz. :—

(i) From the proposed deep water port at Rocky Island (Gulf of Carpentaria) to Borroloola; (2) From Borroloola to near Anthony's Lagoon; (3) From Daly Waters to a point on the Queensland Border about 44 miles south of Camooweal; and (3) From a point on the Daly Waters—Queensland Border survey 45 miles south of Daly Waters, and near Newcastle Waters to the border of Western Australia.

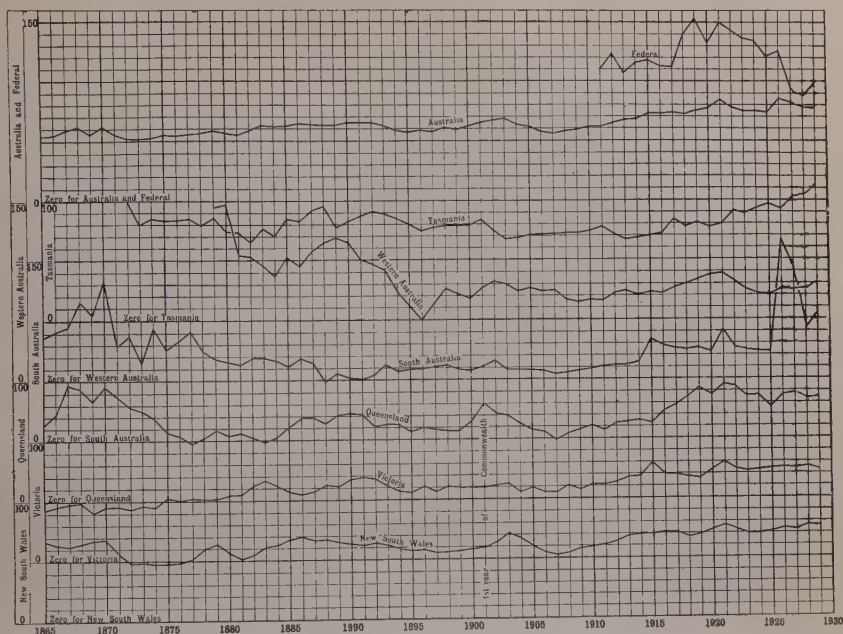
7. **Mileage open, worked, and Train miles run.**—The next table shows the length of the Federal railways open for traffic, average miles worked, and the train miles run in the years 1925 to 1929 :—

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES, 1925 TO 1929.

MILES OPEN FOR TRAFFIC.

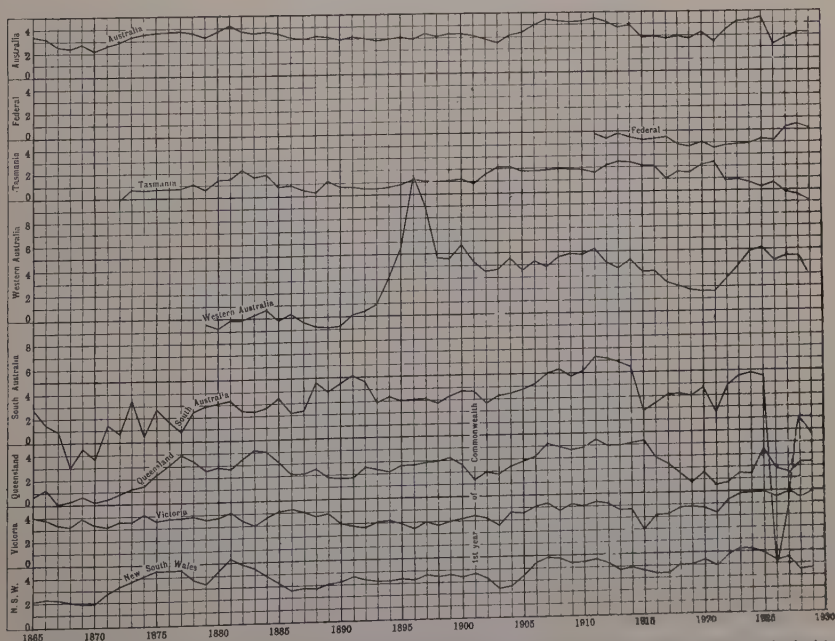
Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
	Miles.	Miles.	Miles.	Miles.	Miles.
1925	1,051	478	5	199	1,733
1926	1,051	478	5	199	1,733
1927	1,051	478	5	199	1,733
1928	1,051	478	5	199	1,733
1929	1,052	648	5	265	1,970

PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE OF GOVERNMENT
RAILWAYS, 1865 TO 1929.



EXPLANATION.—The base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and Australia, with, however, the exceptions that the zero lines for Australia and Federal are identical.

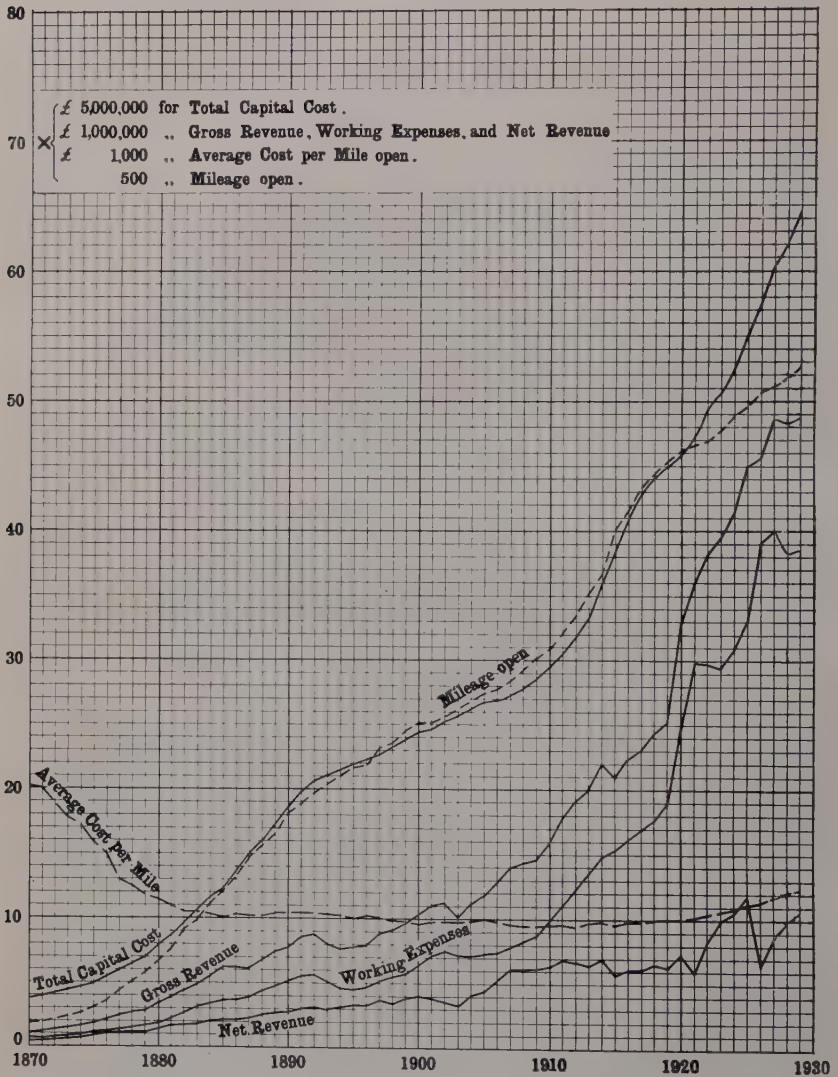
PERCENTAGES OF NET REVENUE ON CAPITAL COST OF GOVERNMENT
RAILWAYS, 1865 TO 1929.



EXPLANATION.—The base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and Australia being different, but the zero line for Federal is the same as that for Australia.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF AUSTRALIA, 1870 TO 1929.



EXPLANATION.—The base of each small square represents throughout one year. The significance of the vertical height of each square varies according to the nature of the several curves.

In the curve for the total capital cost, the vertical side of each square represents £5,000,000.

In the curves for (i) gross revenue, (ii) working expenses, and (iii) net revenue, the vertical side of each small square represents £1,000,000. For the curve of average cost per mile open, the vertical side of each small square represents £1,000. The mileage open is shown by a dotted curve, the vertical side of each small square representing 500 miles.

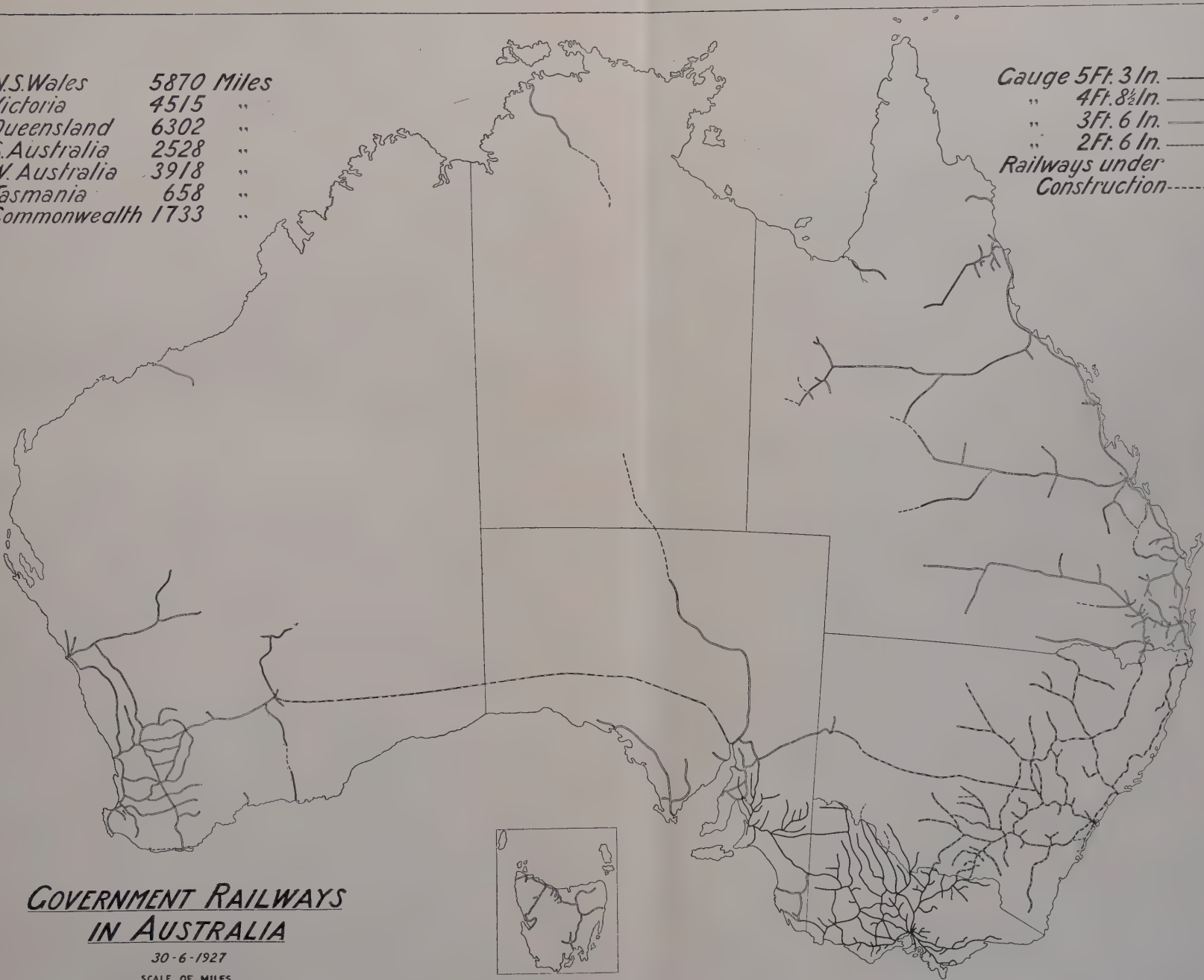
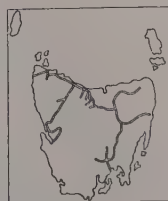
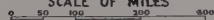
N.S.Wales	5870 Miles
Victoria	4515 "
Queensland	6302 "
S. Australia	2528 "
W. Australia	3918 "
Tasmania	658 "
Commonwealth	1733 "

Gauge 5Ft. 3 In.	————
" 4Ft. 8½ In.	————
" 3Ft. 6 In.	————
" 2Ft. 6 In.	————
Railways under Construction	-----

GOVERNMENT RAILWAYS IN AUSTRALIA

30-6-1927

SCALE OF MILES



RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES
1925 TO 1929—*continued.*

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	

AVERAGE MILES WORKED.

	Miles.	Miles.	Miles.	Miles.	Miles.
1925	1,051	478	5	199	1,733
1926	1,051	478	5	199	1,733
1927	1,051	478	5	199	1,733
1928	1,051	478	5	199	1,733
1929	1,052	566	5	265	1,888

TRAIN MILES RUN.(a)

1925	472,459	283,762	5,999	51,279	813,499
1926	471,322	192,773	7,123	60,641	731,859
1927	487,160	263,227	12,402	69,872	832,661
1928	485,848	359,160	15,632	105,042	965,682
1929	500,402	408,970	12,915	82,861	1,005,148

(a) Traffic Train Mileage (exclusive of "Assistant" and "Light" mileages).

8. Cost of Construction and Equipment.—In the following table particulars are given of the cost of construction and equipment for traffic of the undermentioned railways for each of the years 1925 to 1929:—

RAILWAYS, FEDERAL.—CAPITAL COST, 1925 TO 1929.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.(b)	North Australia.	

TOTAL COST OF CONSTRUCTION AND EQUIPMENT OF LINES OPEN.

	£	£	£	£	£
1925	7,435,771	2,554,068	50,720	1,727,412	11,767,971
1926	7,515,553	2,663,099	50,974	1,736,360	11,965,986
1927	7,614,277	2,854,801	82,945	1,750,772	12,302,795
1928	7,682,126	2,908,644	87,369	1,760,756	12,438,895
1929	7,736,355	3,882,006	83,888	2,431,964	14,134,213

COST PER MILE OPEN.

1925	7,072	25,345	10,267	8,694	6,790
1926	7,148	5,572	10,318	8,739	6,905
1927	7,242	5,973	13,964	8,812	7,099
1928	7,306	6,086	17,686	8,863	7,178
1929	7,355	5,991	16,981	9,183	7,176

(a) Exclusive of Rolling Stock the property of South Australian Government Railways.

(b) Exclusive of Rolling Stock the property of New South Wales Government Railways.

The sum of £1,527,251, of which £110,986 was for surveys, etc., has been provided from revenue for capital purposes to 30th June, 1929, and has been included in the total shown above.

9. *Gross Revenue.*—(i) *Total, per average mile worked, and per train mile run.* The following table shows the total revenue from all sources, the revenue per average mile worked, and the revenue per train mile run for each of the undermentioned railways for the financial years 1925 to 1929 inclusive :—

RAILWAYS, FEDERAL.—GROSS REVENUE, TOTAL, ETC., 1925 TO 1929.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	

TOTAL GROSS REVENUE.

	£	£	£	£	£
1925	256,647	110,256	7,029	35,180	409,112
1926	276,430	82,649	11,665	41,347	412,091
1927	303,212	125,039	14,739	55,718	498,708
1928	333,608	188,143	9,044	69,054	599,849
1929	332,199	184,046	6,824	46,156	569,225

GROSS REVENUE PER AVERAGE MILE WORKED.

1925	244	231	1,423	177	236
1926	263	173	2,362	208	238
1927	288	262	2,984	280	288
1928	317	394	1,831	348	346
1929	316	325	1,381	174	302

GROSS REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.
1925	130.37	93.25	281.20	164.65	120.69
1926	140.67	101.68	383.98	160.57	134.41
1927	149.36	114.00	285.22	191.38	143.73
1928	164.80	125.72	138.85	157.77	149.08
1929	159.32	108.00	126.81	133.69	135.92

(ii) *Classification and Percentages.* During the year 1928–29 receipts from coaching traffic and goods and live stock represented 61 per cent. and 19 per cent. of the total gross revenue of the Trans-Australian line, similar percentages for the remaining lines being :—Central Australian line 14 per cent. and 84 per cent., Federal Capital Territory line 47 per cent. and 52 per cent., and North Australia line 11 per cent. and 55 per cent. coaching and goods and live stock revenue respectively.

The miscellaneous receipts for the year 1928–29 include an amount of £33,683, revenue from dining cars and refreshment services on the Trans-Australian Railway. A sum of £32,595 was received from this source during the previous year.

10. *Working Expenses.*—(i) *Total.* The following table shows the total working expenses, and the percentages on the corresponding gross revenues of each railway for each year from 1925 to 1929.

Details of the annual expenditure on (a) maintenance of ways, works and buildings, (b) locomotives, carriages and wagons repairs and renewals, (c) traffic expenses, and (d) compensation, general and miscellaneous charges, are given in (iii) following.

RAILWAYS, FEDERAL.—WORKING EXPENSES, TOTAL, ETC., 1925 TO 1929.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
TOTAL WORKING EXPENSES.					
	£	£	£	£	£
1925	294,164	158,009	4,882	40,015	497,070
1926	282,999	187,835	6,946	43,240	521,020
1927	271,886	131,613	10,036	57,960	471,495
1928	287,942	170,285	11,234	67,991	537,452
1929	300,270	196,329	10,331	56,862	563,792

PERCENTAGE OF WORKING EXPENSES ON REVENUE.

	%	%	%	%	%
1925	114.61	143.31	69.45	113.75	134.45
1926	102.38	227.27	59.55	104.58	126.43
1927	89.67	105.25	68.09	104.02	94.53
1928	86.30	90.50	124.21	98.46	89.59
1929	90.39	106.67	151.39	123.20	99.05

Compared with results for the previous year, the percentage of working expenses on revenue show increases for each of the four railways. There was a decrease of earnings on each of the railways, due mainly to (a) decreases in live stock and wool traffic on the Trans-Australian and Central Australian lines owing to drought conditions; (b) reduction of amount of railway construction material transported for the North Australian railway extension; and (c) decrease in goods traffic on the Federal Capital Territory line owing to the curtailment of building operations at Canberra. The increases in working expenses on the Trans-Australian and Central Australian lines were due mainly to heavy costs of repairs and overhauls to locomotives and rolling stock during the year.

(ii) *Averages.* The next table gives the working expenses per average mile worked, and per train-mile run for each railway for the years 1925 to 1929 :—

RAILWAYS, FEDERAL.—WORKING EXPENSES, AVERAGES, 1925 TO 1929.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
WORKING EXPENSES PER AVERAGE MILE WORKED.					
	£	£	£	£	£
1925	280	331	988	201	287
1926	269	393	1,406	218	301
1927	254	275	2,032	292	272
1928	274	356	2,274	342	310
1929	286	347	2,091	215	299

WORKING EXPENSES PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.
1925	149.43	133.64	195.31	187.29	146.65
1926	144.10	233.85	234.04	171.13	170.86
1927	133.95	120.00	194.21	199.08	135.90
1928	142.24	113.79	172.47	155.34	133.57
1929	144.01	115.21	191.98	164.70	134.62

(iii) *Classification and Percentages.* Of the total working expenses of the Federal Railways during the year 1928–29, maintenance expenses represented 30 per cent., locomotive, carriage and wagon charges 46 per cent. and traffic expenses 16 per cent. Details for each line were as follows:—Trans-Australian line 25 per cent., 48 per cent. and 15 per cent.; Central Australia line 37 per cent., 47 per cent. and 13 per cent.; Federal Capital Territory line 10 per cent., 41 per cent. and 41 per cent.; and North Australia line 34 per cent., 36 per cent. and 25 per cent. respectively.

11. *Passenger Journeys, and Tonnage of Goods and Live Stock.*—(i) *General.* In the next table particulars are given of the passenger journeys and tonnage of goods and live stock carried on the Federal railways during the years 1925 to 1929:—

RAILWAYS, FEDERAL.—TRAFFIC, 1925 TO 1929.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
1925	32,362	65,322	110,499	3,798	211,981
1926	34,512	65,250	138,923	5,293	243,978
1927	34,779	55,284	125,605	5,716	221,384
1928	36,212	60,410	53,255	5,899	155,776
1929	36,030	57,993	47,470	5,135	146,628

PASSENGER JOURNEYS.

	No.	No.	No.	No.	No.
1925	32,362	65,322	110,499	3,798	211,981
1926	34,512	65,250	138,923	5,293	243,978
1927	34,779	55,284	125,605	5,716	221,384
1928	36,212	60,410	53,255	5,899	155,776
1929	36,030	57,993	47,470	5,135	146,628

TONNAGE OF GOODS AND LIVE STOCK CARRIED.

	tons.	tons.	tons.	tons.	tons.
1925	42,225	63,622	25,405	15,259	146,511
1926	37,848	46,870	45,933	15,275	145,926
1927	43,503	81,048	84,450	15,612	224,613
1928	45,087	96,799	41,848	22,628	206,362
1929	40,750	90,734	23,196	14,919	169,599

(ii) *Passenger-Mileage Summary.* The appended table gives particulars of "Passenger-Mileage" on each of the Federal railways for the year 1928–29:—

RAILWAYS, FEDERAL.—PASSENGER-MILES SUMMARY, 1928–29.

Railway.	Passenger Train Mileage.	Number of Passenger Journeys.	Total "Passenger-Miles."	Amount Received from Passengers.	Average Number of Passengers carried per Train Mile.	Average Mileage per Passenger Journey.	Average Earnings per "Passenger-Mile."	Average Fare per Passenger Journey.	Density of Traffic per Average Mile Worked.
			000 omitted.	£		Miles.	d.	£ s. d.	
Trans-Australian ..	361,457	36,030	33,376	155,949	92	926	1.12	4 6 7	31,731
Central Australia ..	34,752	57,993	3,442	20,232	99	59	1.41	0 7 0	6,074
Federal Capital Territory ..	9,991	47,470	236	2,014	23	5	2.05	0 0 10½	47,719
North Australia ..	9,846	5,135	575	4,583	58	112	1.91	0 17 10	2,171

(iii) *Ton-Mileage Summary.* Particulars of ton-mileage are shown hereunder in respect of each of the Federal railways for the year 1928-29 :—

RAILWAYS, FEDERAL.—“TON-MILEAGE” SUMMARY, 1928-29.

Railway.	Goods Train Mileage.	Total Tons Carried.	Total “Ton-Miles.”	Goods Earnings.	Average Freight-paying Load per Train Mile.	Average Haul per ton.	Earnings per “Ton-Mile.”	Density of Traffic per Average Mile Worked.
			,000 omitted.	£	Tons.	Miles.	d.	
Trans-Australian ..	138,945	40,750	10,786	64,251	(a)78	265	1.43	10,254
Central Australia ..	374,218	90,734	26,674	153,699	(a)71	294	1.38	47,080
Federal Capital Territory ..	2,924	23,196	116	3,565	38	5	7.38	23,490
North Australia ..	73,015	14,919	2,431	25,320	(a)33	163	2.50	9,179

(a) Approximate.

12. *Passenger Fares, Goods Rates, and Parcel Rates.*—In previous issues of the Year Book particulars were included of Passenger Fares, Goods Rates (Ordinary Goods and Agricultural Produce), and Parcels Rates, but it is not proposed to republish this information herein.

13. *Rolling Stock, 1929.*—The following table shows the numbers of locomotives and rolling stock in use on the Federal railways, classified according to gauge :—

RAILWAYS, FEDERAL.—LOCOMOTIVES AND ROLLING STOCK, 1929.

Railway.	Gauge.		Total.	Gauge.		Total.	Gauge.		Total.
	4 ft. 8½ in.	3 ft. 6 in.		4 ft. 8½ in.	3 ft. 6 in.		4 ft. 8½ in.	3 ft. 6 in.	
	LOCOMOTIVES.			COACHING STOCK.			STOCK OTHER THAN COACHING.		
Trans-Australian	68	..	68	51	..	51	728	..	728
Central Australia	..	24	24	..	18	18	..	313	313
North Australia	..	13	13	..	12	12	..	312	312
Total ..	68	37	105	51	30	81	728	625	1,353

The Federal Capital Territory Railway was worked by the New South Wales Government Railway Department, using its own rolling stock.

14. *Employees.*—(i) *General.* The following table shows the number of employees on the Federal railways at 30th June in each year from 1925 to 1929 inclusive, classified according to salaried and wages staffs :—

RAILWAYS, FEDERAL.—EMPLOYEES, 1925 TO 1929.

Railway.	30th June—									
	1925.		1926.		1927.		1928.		1929.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Trans-Australian	173	906	218	870	132	811	126	756	123	776
Central Australia ..	(a)	(a)		345	66	523	69	492	68	539
North Australia ..	17	147		184	29	648	24	320	22	178
Federal Capital Territory (b) ..	..	..	..	..	..	..	..	..	5	8
Total ..	190	1,053	218	1,399	227	1,982	219	1,568	223	1,501

(a) Worked by South Australian Government Railways.

(b) Worked by New South Wales Government Railways until 1st July, 1928.

Of the 223 salaried staff employed, 17 were engaged in the Construction Branch (2 on the Trans-Australian Line, 9 on the Central Australia Line, and 6 on the North Australia Line), the corresponding particulars for the wages staff being :—Trans-Australian Line 155, Central Australia Line 143, and North Australia Line 80, a total of 378 persons.

(ii) *Average Employed throughout Year.* The average number of employees throughout the year 1928-29 was 226 salaried staff (21 of whom were on construction work) and 1,395 wages staff (Construction, 298).

15. *Accidents.*—(i) *Classification.* The table hereunder furnishes a classification of accidents on the Federal railways during the year 1928-29 :—

RAILWAYS, FEDERAL.—ACCIDENTS, 1928-29.

Classification.	Trans-Australian.		Central Australia.		Federal Capital Territory.		North Australia.		All Federal Railways.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Train Accidents—										
Passengers
Employees	1	..	2	..	..	..	..	..	3
Accidents on line (other than train accidents)—										
Passengers	2	..	..	..	..	..	2
Employees	3	..	3
Other Persons
Shunting Accidents—										
Passengers
Employees	1	..	3	..	..	..	1	..	5
Other Persons	1	..	..	..	..	..	..	..	1
Employees proceeding to or from duty within the Railway boundary
Persons killed or injured at crossings
Trespassers
Miscellaneous
Total	3	..	7	..	..	..	4	..	14

(ii) *Particulars for Quinquennium 1925-29.* The following table shows the number of accidents in each of the years 1925 to 1929 :—

RAILWAYS, FEDERAL.—ACCIDENTS, 1925 TO 1929.

Railway.	Number of Persons.									
	Killed.					Injured.				
	1925.	1926.	1927.	1928.	1929.	1925.	1926.	1927.	1928.	1929.
Trans - Australian	..	..	..	3	..	6	6	12	3	3
Central Australia	2	1	1	2	..	3	18	5	7	7
Federal Capital Territory ..	..	..	1	..	..	..	..	..	1	..
North Australia ..	..	..	..	2	..	4	..	5	9	4
Total	2	1	2	7	..	13	24	22	20	14

§ 3. State Railways.

1. **Administration and Control of State Railways.**—The policy of Government control of the railways has been adopted in each State, and earlier issues of the Year Book (see No. 6, p. 693) contain a description of the methods adopted by the various State Governments in the control and management of their railways.

2. **Mileage Open, 1925 to 1929.**—(i) *General.* The following table shows the length of State railways open for traffic on the 30th June in the years 1925 to 1929 :—

RAILWAYS, STATE.—MILEAGE OPEN FOR TRAFFIC, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1925	5,656	4,483	6,114	2,452	3,733	673	23,111
1926	5,742	4,627	6,240	2,499	3,864	673	23,645
1927	5,750	4,634	6,302	2,528	3,918	658	23,790
1928	5,867	4,697	6,345	2,527	3,977	658	24,071
1929	5,940	4,699	6,447	2,542	4,079	653	24,360

A graph indicating the mileage open in Australia at the end of each of the years 1870 to 1929 accompanies this chapter.

The appended statement shows the actual mileage opened for traffic in the year 1929, also the annual average increase in mileage opened since 1919 in each State :—

RAILWAYS, STATE.—MILEAGE OPENED ANNUALLY.

Mileage.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
Mileage opened during 1928-29	73.26	2.26	102.43	14.42	101.85	4.80(a)	289.42
Average annual mileage increase for 10 years to 30th June, 1929 ..	111.56	50.95	97.77	25.16	54.03	5.19	344.66

(a) Due to the closing of the Palooa to Barrington line. No new lines were opened during the year.

(ii) *New South Wales.* During the year ended 30th June, 1929, the following new lines were opened for traffic, viz. :—Bankstown to Sefton Park (2.27 miles), Uranquinty to Galore (28.60 miles), Ungarie to Naradhan (37.56 miles), and Galore to Kywong (4.90 miles), making a total of 73.33 miles. Adjustments reduced the length of existing lines by 0.07 miles, the total increase for the year being therefore 73.26 miles.

(iii) *Victoria.* During the year ended 30th June, 1929, the following new lines were opened for traffic, viz. :—South Kensington to West Footscray (2.44 miles) and Darling to East Malvern (0.82 miles), while the line from Black Diamond Junction to Strzelecki (1.00 miles) was dismantled, the total increase for the year being 2.26 miles.

(iv) *Queensland.* During 1928-29, 102.32 miles of new lines were opened for traffic, viz. :—Mulgeldie to Monto (7.92 miles), Chorregon to Winton (40.45 miles), and Duchess to Mt. Isa (53.95 miles); increases in the mileage of existing lines (0.11 miles) make the total increase for the year 102.43 miles.

(v) *South Australia.* The new railway from Renmark to Barmera (20.59 miles of 5' 3" gauge) was opened on 1st August, 1928, while the line from South Terrace to Glenelg (6.17 miles of 5' 3" gauge) was closed and sold on 2nd April, 1929. The net increase for the year 1928-29 was therefore 14.42 miles.

(vi) *Western Australia.* The following new mileage was opened for traffic during the year :—Amery to Kalannie (60.85 miles), Burakin to Kulja (8 miles) and Denmark to Frankland River (33 miles), a total of 101.85 miles.

(vii) *Tasmania.* No new extensions were opened during the year. The line from Palooa to Barrington (4.80 miles) was closed on 17th August, 1929.

3. Length and Gauge of Railway Systems in each State.—In all the States the Government railways are grouped, for the convenience of administration and management, into several divisions or systems. A summary showing concisely the gauge and length of the main and branch lines included in each division or system in the different States for the year ended 30th June, 1929, is given in the Transport and Communication Bulletin No. 21 issued by this Bureau.

4. Average Mileage Worked and Train-Miles Run.—The total mileage open for traffic at the end of each financial year has been given previously, but, in considering the returns relating to revenue and expenditure and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shows the average number of miles worked and the total number of train-miles run by the Government railways of each State during the years 1925 to 1929 inclusive :—

RAILWAYS, STATE.—MILEAGE WORKED AND MILES RUN, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AVERAGE MILEAGE WORKED.							
1925 ..	5,571	4,448	6,078	2,452	3,669	673	22,891
1926 ..	5,722	4,526	6,145	2,491	3,837	673	23,394
1927 ..	5,747	4,627	6,259	2,523	3,906	658	23,720
1928 ..	5,826	4,661	6,340	2,528	3,971	658	23,984
1929 ..	5,903	4,698	6,387	2,545	3,993	654	24,180

TRAIN-MILES RUN. (a)

1925 ..	23,304,916	17,482,006	12,107,995	6,653,248	4,843,304	1,358,980	65,750,449
1926 ..	24,624,995	17,575,547	12,866,323	6,846,149	4,862,505	1,342,475	68,117,994
1927 ..	26,323,847	18,030,749	11,905,668	6,959,734	5,273,894	1,303,023	69,798,910
1928 ..	26,896,530	17,694,928	11,655,122	6,503,474	5,729,735	1,416,741	69,896,580
1929 ..	27,382,124	17,979,219	11,893,147	5,765,366	5,829,465	1,405,929	70,255,260

(a) Traffic Train Miles (exclusive of "Assistant" and "Light" mileages).

5. Lines under Construction, and Lines Authorized, 1929.—(i) *General.* The following statement gives particulars up to the 30th June, 1929, of the mileage of State railways (a) under construction, and (b) authorized for construction but not commenced :—

**RAILWAYS, STATE.—MILEAGE UNDER CONSTRUCTION AND AUTHORIZED,
30th JUNE, 1929.**

Particulars.	N.S.W.	Vic. (a)	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction ..	364·17	117·50	121·00	..	263·25	..	865·92
Mileage authorized but not commenced ..	295·50	37·50	1,130·00	26·25	372·50	..	1,861·75

(a) See sub-section (b) below.

(b) Exclusive of 200 miles on which work has been suspended.

(ii) *Lines under Construction.* In spite of the great extensions of State railways since the year 1875, there are still, in some of the States, immense areas of country which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished. The general policy of the States is to extend the existing lines inland in the form of light railways as settlement increases, and while it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view.

(a) *New South Wales.* The total mileage under construction was 364.17 miles, consisting of the following lines:—Booyong to Ballina (12.63 miles); Kyogle to Richmond Gap (26.66 miles); Moss Vale to Unanderra (38.08 miles); Grafton to South Grafton (1.79 miles); Camurra to Boggabilla (73.73 miles); Wyalong to Euglo (33.40 miles); Tempe to East Hills (10.30 miles); Hillston to Roto (29.71 miles); Guyra to Dorrigo (89 miles); Casino to Bonalbo (37.78 miles); and City and Suburban Railway (11.09 miles).

(b) *Victoria.* In this State 49.25 miles of 5 ft. 3 in. gauge lines are being constructed, viz.:—Albion to Broadmeadows (8.50 miles); Darling to Glen Waverley (5.75 miles); and Nowingi to Millewa South (35 miles). Under the provisions of the Border Railways Act 1922 (Vic. 3194) the following lines are under construction in New South Wales territory, viz.:—Euston to Letta (30.25 miles); and Yarrawonga to Oaklands (38 miles). On completion these lines, which are of 5 ft. 3 in. gauge, will be taken over and operated by the Victorian Railways Commissioners.

(c) *Queensland.* In previous issues of the Year Book details were given of the scheme of railway construction under the provisions of the North Coast Railway Act 1910 (see Year Book No. 15, p. 551). On the 30th June, 1929, the following lines, of an aggregate length of 121 miles, were under construction:—Southern Division—4 ft. 8½ in. gauge—South Richmond to Richmond Gap (68 miles); 3 ft. 6 in. gauge—Inglewood to Texas (35 miles) and Kalpowar to 88½ miles (18 miles). The following lines are partially constructed, but work thereon is temporarily suspended:—Goondoon to Kalliw Creek (18 miles); Yaraka to Powell's Creek (27 miles); Dajarra to Moonah Creek (41 miles); Rannes to Monto (63 miles); Tara towards Surat (14 miles); 88½-Mile to Monto (8 miles); and Winton to 37-Mile (37 miles); a total of 208 miles.

(d) *South Australia.* At 30th June, 1929, no railway construction work was in progress.

(e) *Western Australia.* The following lines were in course of construction by the Public Works Department on the 30th June, 1929:—Lake Brown to Bullfinch (50.25 miles); Pemberton to Westcliffe (28 miles); Meekatharra to Wiluna (111 miles); and Kulja eastward (74 miles); a total of 263.25 miles.

(f) *Tasmania.* At 30th June, 1929, no railway construction work was in progress.

(iii) *Lines Authorized for Construction.* (a) *New South Wales.* At the 30th June, 1929, the following lines had been authorized for construction but not commenced:—Gilgandra to Collie (21.51 miles); Jerilderie towards Deniliquin (25.00 miles); Rand to Bull Plain (27.55 miles); Canowindra to Gregra (33.87 miles); St. Leonards to Eastwood (9.07 miles); Sandy Hollow via Gulgong to Maryvale (146.5 miles); and Inverell to Ashford (32 miles); a total distance of 295.50 miles.

(b) *Victoria.* The following lines were authorized, but construction had not been commenced up to the end of June, 1929:—5 ft. 3 in. gauge: La La Siding to Big Pat's Creek (2.50 miles); Casterton to Nangeela (9 miles); and Orbost to Brodribb (6 miles); Under the Border Railways Act 1922, the following line has been authorized for construction in New South Wales Territory:—Extension from Mildura or vicinity (Victoria) to 20 miles north (New South Wales); an aggregate distance of 37.50 miles.

(c) *Queensland.* In addition to the new lines upon which work has been commenced, Parliament has authorized the construction of the following parts of the Great Western Railway—Section A, from Quilpie to Eromanga (120 miles); Section B, from Powell's Creek (224 miles); Section C, from 37-Mile to Springvale (324 miles); and Section D.

from Moonah Creek (216 miles). The following lines were also authorized for construction :—Texas to Silverspur (9 miles); Mount Edwards to Maryvale (28 miles); Lanefield to Rosevale (17 miles); Gatton to Mount Sylvia (11 miles); Wandooan to Taroom (42 miles); Dirranbandi extension (52 miles); Yarraman to Nanango (16 miles); Brooloo to Kenilworth (10 miles); Dobbryn to Myally Creek (50 miles); and Pearamon towards Boongee (11 miles); a total of 1,130 miles.

(d) *South Australia*. Parliament has authorized the construction of a line on the 3 ft. 6 in. gauge from Keilpa to Mangalo Hall (26.25 miles).

(e) *Western Australia*. The following lines were authorized for construction up to the 30th June, 1929 :—Yarramony eastwards (85 miles); Brookton to Dale River (27 miles); Boyup Brook to Cranbrook (95 miles); Manjimup to Mount Barker (107 miles); Leighton to Robb's Jetty (4.50 miles); and Lake Grace to Kalgarin (54 miles); a total distance of 372.50 miles.

(f) *Tasmania*. There were no new railways authorized on which work had not been commenced at 30th June, 1929.

6. *Cost of Construction and Equipment*.—(i) *General*. The total cost of construction and equipment of the State railways as distinct from those owned by the Commonwealth Government at the 30th June, 1929, amounted to £309,636,337, representing an average cost of £48.58 per head of population. If the cost of railways owned by the Commonwealth Government is included, the total capital cost (£323,770,550) is equivalent to an amount of £50.80 per head of the population of the Commonwealth, while the total mileage open (26,329.60 miles) per 1,000 of population is 4.13. Particulars of the capital expenditure incurred on lines open for traffic are given in the following table :—

RAILWAYS, STATE.—MILEAGE AND COST TO 30th JUNE, 1929.

State.	Length of Line Open (Route).	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.	Mileage per 1,000 of Population at 30th June, 1929.
	Miles.	£	£	£	Miles.
New South Wales (a) ..	5,940.22	122,566,422	20,633	49.61	2.40
Victoria	4,699.01	73,061,522	15,548	41.34	2.66
Queensland	6,447.18	58,251,561	9,035	62.83	6.95
South Australia (a) ..	2,541.63	26,835,717	10,558	45.98	4.36
Western Australia (a) ..	4,078.48	22,427,112	5,498	54.47	9.91
Tasmania	653.45	6,494,003	9,945	30.56	3.07
All States	24,359.97	309,636,337	12,711	48.58	3.82

(a) Exclusive of Federal railways.

The lowest average cost (£5,498) per mile open is in Western Australia, and the highest (£20,633) in New South Wales, as compared with an average of £12,711 for all States. There were few costly engineering difficulties in Western Australia, and the fact that contractors were permitted to carry traffic during the term of their contracts considerably reduced expenditure, particularly in respect of all goldfield contracts.

In the table above the figures relating to cost of construction and equipment do not include the discounts and flotation charges on loans allocated to the railways. This will explain the differences between the amounts shown therein for Queensland, South Australia, and Western Australia, and those shown in the Railway Reports for these States.

(ii) *Capital Cost, All Lines. (a) Total.* The increase in the total capital cost of construction and equipment of Government railways for each year from 1925 to 1929 is shown in the following table:—

RAILWAYS, STATE.—CAPITAL COST OF LINES OPEN, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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TOTAL COST OF LINES OPEN.

	£	£	£	£	£	£	£
1925 ..	98,060,216	67,136,069	49,453,595	23,637,283	19,643,517	6,416,194	264,346,874
1926 ..	103,674,668	68,888,145	51,555,649	25,529,866	20,327,456	6,450,185	276,425,969
1927 ..	111,226,149	70,298,673	54,496,012	28,120,046	20,855,604	6,486,109	291,482,593
1928 ..	116,221,374	72,282,201	56,281,445	26,021,454	21,403,256	6,483,281	298,693,011
1929 ..	122,566,422	73,061,522	58,251,561	26,835,717	22,427,112	6,494,003	309,636,337

COST PER MILE OPEN.

	£	£	£	£	£	£	£
1925 ..	17,338	14,974	8,088	9,641	5,263	9,535	11,435
1926 ..	18,056	14,887	8,262	10,216	5,260	9,586	11,690
1927 ..	19,344	15,169	8,648	11,124	5,322	9,854	12,252
1928 ..	19,809	15,390	8,871	10,297	5,382	9,849	12,409
1929 ..	20,033	15,548	9,035	10,558	5,498	9,945	12,711

(b) *From Consolidated Revenue.* The following table shows the amounts provided from Consolidated Revenue for construction and equipment to 30th June, 1929:—

RAILWAYS, STATE.—EXPENDITURE FROM CONSOLIDATED REVENUE FOR CONSTRUCTION AND EQUIPMENT TO 30th JUNE, 1929.

To 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1929 ..	659,930	4,278,489	..	..	643,943	16,935	5,599,297

(iii) *Loan Expenditure.* The subjoined table shows the total loan expenditure on Government railways (including lines both open and unopen) in each State, except Tasmania, and on Government railways and tramways in the latter State for the years 1925 to 1929:—

RAILWAYS, STATE.—LOAN EXPENDITURE, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	All States.
	£	£	£	£	£	£	£
1925 ..	4,246,963	1,483,720	1,741,805	2,151,329	534,103	28,638	10,186,558
1926 ..	6,060,259	1,489,285	2,826,188	2,764,511	642,854	17,255	13,800,352
1927 ..	6,229,347	1,821,005	2,470,083	2,460,555	642,225	29,824	13,653,039
1928 ..	8,172,114	1,651,884	1,646,982	555,798	806,895	37,196	12,870,869
1929 ..	6,356,971	1,249,409	1,212,131	706,144	835,051	Cr. 11,684	10,348,022

(a) Including tramways.

The following statement shows the total loan expenditure on railways to the 30th June, 1929 :—

RAILWAYS, STATE.—TOTAL LOAN EXPENDITURE TO 30th JUNE, 1929.

State ..	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. a	All States.
	£	£	£	£	£	£	£
Expenditure	142,255,901	72,357,133	60,204,291	31,819,982	23,500,540	6,947,918	337,085,765

(a) Including tramways.

7. Gross Revenue.—(i) *General.* The total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run during each financial year from 1925 to 1929 inclusive were as follows :—

RAILWAYS, STATE.—GROSS REVENUE, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
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TOTAL GROSS REVENUE.

	£	£	£	£	£	£	£
1925	16,769,452	12,759,197	7,109,210	4,012,736	3,359,501	548,256	44,558,352
1926	16,939,032	12,671,061	7,437,090	4,237,718	3,337,292	545,191	45,167,384
1927	18,906,543	13,652,434	7,325,677	4,062,133	3,607,989	539,352	48,094,128
1928	19,029,512	12,821,059	7,381,532	3,941,276	3,858,051	554,743	47,586,173
1929	19,615,616	13,164,973	7,568,647	3,593,646	3,799,764	503,855	48,246,501

GROSS REVENUE PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£
1925	3,010	2,869	1,170	1,637	916	815	1,947
1926	2,960	2,798	1,210	1,701	870	810	1,930
1927	3,290	2,951	1,170	1,610	924	819	2,028
1928	3,266	2,751	1,164	1,559	972	843	1,984
1929	3,323	2,802	1,185	1,412	951	771	1,995

GROSS REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1925	172.70	175.16	140.92	144.75	166.47	96.82	162.64
1926	165.09	173.03	138.73	148.56	164.72	97.47	159.14
1927	172.86	181.72	147.67	140.08	164.19	99.34	165.37
1928	169.80	173.89	152.00	145.44	161.60	93.98	163.30
1929	171.93	175.74	152.73	149.60	156.43	86.01	164.81

The amounts of revenue earned per average mile worked and per train-mile run in respect of (a) coaching and (b) goods and live stock traffic, separately, are given later.

(ii) *Coaching, Goods, and Miscellaneous Receipts.* (a) *Totals.* The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and live stock; and (c) rents and miscellaneous items. The subjoined table shows the gross revenue for 1925 to 1929, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph.

RAILWAYS, STATE.—COACHING, GOODS, ETC., RECEIPTS, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
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COACHING TRAFFIC RECEIPTS.

	£	£	£	£	£	£	£
1925 ..	6,942,093	5,981,437	2,482,026	1,317,102	971,323	221,668	17,915,649
1926 ..	7,101,229	6,070,555	2,454,689	1,277,463	969,160	206,728	18,079,824
1927 ..	7,473,545	6,304,382	2,516,476	1,221,106	980,762	201,048	18,697,319
1928 ..	7,851,512	6,015,383	2,410,293	1,120,094	1,028,656	199,865	18,625,803
1929 ..	8,124,716	5,871,037	2,444,697	1,013,296	979,999	180,295	18,614,040

GOODS AND LIVE STOCK TRAFFIC RECEIPTS.

1925 ..	9,010,929	5,775,522	4,477,985	2,607,628	2,198,322	312,706	24,383,092
1926 ..	8,941,123	5,565,451	4,817,222	2,578,700	2,174,895	320,748	24,398,139
1927 ..	10,490,593	6,344,096	4,629,103	2,662,866	2,413,852	319,276	26,859,786
1928 ..	10,228,586	5,763,701	4,824,885	2,616,503	2,619,816	335,431	26,388,922
1929 ..	10,379,192	6,251,682	4,949,614	2,358,579	2,610,193	305,287	26,854,547

MISCELLANEOUS RECEIPTS.

1925 ..	816,430	1,002,238	149,199	88,006	189,856	13,882	2,259,611
1926 ..	896,680	1,035,055	165,179	381,555	193,237	17,715	2,689,421
1927 ..	942,405	1,003,956	180,098	178,161	213,375	19,028	2,537,023
1928 ..	949,414	1,041,975	146,354	204,679	209,579	19,447	2,571,448
1929 ..	1,111,708	1,042,254	174,336	221,771	209,572	18,273	2,777,914

The increase in miscellaneous receipts in the State of South Australia during 1925-26 was due to the inclusion of £225,242 on account of Border Railway adjustments with the State of Victoria, and £78,619 earned from bookstalls and refreshment rooms, which were operated departmentally for the first time.

(b) *Percentages.* The following table shows for the two years 1927-28 and 1928-29 the percentage which each class of receipts bears to the total gross revenue :—

RAILWAYS, STATE.—PERCENTAGES OF RECEIPTS, 1928 AND 1929.

State.	1928.			1929.		
	Coaching.	Goods and Live Stock.	Miscellaneous.	Coaching.	Goods and Live Stock.	Miscellaneous.
	%	%	%	%	%	%
New South Wales ..	41.26	53.75	4.99	41.42	52.91	5.67
Victoria ..	46.92	44.95	8.13	44.59	47.49	7.92
Queensland ..	32.65	65.37	1.98	32.30	65.40	2.30
South Australia ..	28.42	66.39	5.19	28.20	65.63	6.17
Western Australia ..	26.66	67.91	5.43	25.79	68.69	5.52
Tasmania ..	36.03	60.47	3.50	35.78	60.59	3.63
All States ..	39.14	55.46	5.40	38.58	55.66	5.76

(c) *Averages for Coaching Traffic Receipts.* The subjoined table shows the receipts from coaching traffic per average mile of line worked and per passenger-train-mile in each State for the year ended the 30th June, 1929 :—

RAILWAYS, STATE.—COACHING TRAFFIC RECEIPTS, AVERAGES, 1929.

State.	Number of Passenger-Train-Miles.	Coaching Traffic Receipts.		
		Gross.	Per Average Mile Worked.	Per Passenger-Train-Mile.
	No.	£	£	d.
New South Wales	16,780,177	8,124,716	1,376	116.20
Victoria	11,740,834	5,871,037	1,250	120.01
Queensland	4,487,776	2,444,697	383	130.74
South Australia	3,578,690	1,013,296	398	67.95
Western Australia	2,168,764	979,999	245	108.45
Tasmania	582,613	180,295	276	74.27
All States	39,338,854	18,614,040	770	113.56

(d) *Averages for Goods and Live Stock Traffic.* The gross receipts from goods and live stock traffic per average mile worked, per goods-train-mile, and per ton carried, for the year ended the 30th June, 1929, are given below :—

RAILWAYS, STATE.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS, AVERAGES, 1929.

State.	Number of Goods-Train-Miles.	Goods and Live-Stock Tonnage.	Goods and Live-Stock Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Goods-Train-Mile.	Per Ton Carried.
	No.	Tons.	£	£	d.	d.
New South Wales	10,601,947	14,516,643	10,379,192	1,758	234.96	171.60
Victoria	6,238,385	8,187,088	6,251,682	1,331	240.51	183.26
Queensland	7,405,371	4,558,099	4,949,614	775	160.41	260.61
South Australia	2,186,676	2,748,423	2,358,579	927	258.87	205.96
Western Australia	3,660,701	3,670,147	2,610,193	654	171.13	170.69
Tasmania	823,316	660,523	305,287	467	88.99	110.93
All States	30,916,396	34,340,923	26,854,547	1,111	208.47	187.68

8. *Working Expenses.*—(i) *General.* In order to make an adequate comparison of the working expenses, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—i.e., a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little back loading.

The following table shows the total annual expenditure and the percentage thereof on gross revenue in each State for the years 1925 to 1929 :—

RAILWAYS, STATE.—WORKING EXPENSES, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States
TOTAL WORKING EXPENSES.							
	£	£	£	£	£	£	£
1925	11,939,686	9,429,728	5,425,167	2,935,755	2,355,087	531,590	32,617,013
1926	12,519,993	9,518,147	6,459,792	2,708,130	2,509,049	504,038	38,622,149
1927	13,795,853	10,193,581	6,495,322	2,797,751	2,685,693	551,192	39,519,392
1928	14,756,327	9,812,749	6,106,140	3,660,740	2,910,811	573,885	37,820,652
1929	14,978,050	9,530,263	6,202,801	3,622,567	3,055,446	563,852	37,952,779

(a) See (ii) below.

PERCENTAGE OF WORKING EXPENSES ON GROSS REVENUE.

	%	%	%	%	%	%	%
1925	71.20	73.90	76.31	73.16	70.10	96.96	73.20
1926	73.91	75.35	86.86	167.10	75.13	92.45	85.51
1927	72.97	74.66	88.67	142.73	74.44	102.20	82.17
1928	77.54	76.54	82.72	93.20	75.45	103.45	79.48
1929	76.36	72.39	81.95	100.80	80.41	111.86	78.66

The variation in the percentage of working expenses on the gross revenue in each State for the years 1865 to 1929 is illustrated in the graph which accompanies this chapter.

(ii) *Special Expenditure.* The large increases in the working expenses in South Australia during the years 1925–26 and 1926–27 are due to amounts of £3,982,314 and £1,962,079 on account of accumulated and deferred charges being debited against the revenues for those years. This expenditure has been shown in this way in deference to the wishes of the South Australian railway authorities. Eliminating these amounts, the percentage of working expenses on gross revenue for South Australia during 1925–26 and 1926–27 would have been 73.12 per cent. and 94.43 per cent., and for all States 76.70 per cent. and 78.09 per cent., respectively.

(iii) *Averages.* The next table shows the working expenses per average mile worked and per train-mile run in each State for the years 1925 to 1929 :—

RAILWAYS, STATE.—WORKING EXPENSES, AVERAGES, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
WORKING EXPENSES PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1925	2,143	2,120	893	1,197	642	799	1,425
1926	2,188	2,108	1,051	2,343	654	749	1,651
1927	2,401	2,203	1,038	2,298	688	837	1,666
1928	2,533	2,105	963	1,448	733	872	1,577
1929	2,537	2,028	971	1,423	765	862	1,569

WORKING EXPENSES PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1925	122.96	129.45	107.54	105.90	116.70	93.87	119.05
1926	122.02	130.33	120.50	248.24	123.84	90.11	136.08
1927	125.77	135.68	130.93	199.93	122.22	101.52	135.89
1928	131.67	133.09	125.74	135.09	121.92	97.22	129.86
1929	131.28	127.22	125.17	150.80	125.79	96.22	129.65

(a) See sub-section (ii) above.

(iv) *Distribution.* The subjoined table shows the distribution of working expenses, under four chief heads of expenditure, for the years 1925 to 1929 :—

RAILWAYS, STATE.—DISTRIBUTION OF WORKING EXPENSES, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
MAINTENANCE.							
	£	£	£	£	£	£	£
1925	2,176,435	1,963,960	1,280,190	501,800	527,493	144,612	6,594,490
1926	2,001,724	1,928,597	1,513,588	a2,407,266	596,046	134,835	8,582,056
1927	2,154,931	2,276,601	1,576,325	a1,027,057	636,466	134,291	7,805,671
1928	2,590,755	2,109,404	1,589,177	584,350	731,860	140,989	7,752,535
1929	2,576,847	1,917,936	1,608,978	658,941	748,123	158,302	7,669,127
LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.							
1925	5,772,631	3,501,911	2,459,370	1,560,923	1,124,157	223,302	14,642,294
1926	6,107,302	3,592,490	2,973,033	a3,611,130	1,157,230	218,326	17,659,511
1927	6,823,914	3,746,921	2,924,903	a3,653,050	1,244,941	222,477	18,616,206
1928	7,158,605	3,659,881	2,657,596	2,002,377	1,306,504	233,670	17,018,633
1929	7,253,076	3,578,165	2,719,211	1,899,717	1,381,160	235,641	17,066,970
TRAFFIC EXPENSES.							
1925	3,121,001	3,228,961	1,593,347	792,762	639,193	122,374	9,497,638
1926	3,391,092	2,701,124	1,859,375	a568,171	685,898	117,246	9,622,906
1927	3,733,225	2,822,524	1,844,066	a598,459	728,466	118,987	10,145,727
1928	3,877,254	2,673,518	1,709,518	823,189	773,806	124,845	9,982,130
1929	3,853,223	2,604,729	1,721,355	764,203	803,016	130,068	9,876,594
OTHER CHARGES.							
1925	869,619	734,896	92,260	80,270	64,244	41,302	1,882,591
1926	1,019,875	1,325,936	113,796	a194,563	69,875	33,681	2,757,676
1927	1,033,783	1,347,535	150,028	a219,185	75,820	75,437	2,951,788
1928	1,123,713	1,369,946	149,849	250,824	98,041	74,381	3,067,354
1929	1,294,904	1,429,433	153,257	299,706	123,147	39,641	3,340,088

(a) See sub-section (II), page 191.

In New South Wales and Victoria the expenditure in connexion with refreshment rooms is included in "Other Charges."

9. *Salaries and Wages.*—The following table shows the total amount paid in salaries and wages, also the amount per average mile worked and per train-mile run in each State during the years 1925 to 1929 :—

RAILWAYS, STATE.—SALARIES AND WAGES PAID AND AVERAGES, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL SALARIES AND WAGES PAID.							
	£	£	£	£	£	£	£
1925	9,884,596	6,969,519	4,199,965	2,689,517	1,909,995	364,771	26,018,368
1926	11,192,851	7,273,485	5,011,678	3,456,996	2,073,207	346,832	29,355,049
1927	12,509,021	7,792,554	5,062,347	3,596,092	2,279,878	336,287	31,576,179
1928	12,693,706	7,725,188	4,751,885	2,915,912	2,442,997	345,803	30,875,491
1929	12,422,298	7,436,531	4,805,836	2,499,872	2,551,056	374,107	30,089,700
SALARIES AND WAGES PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1925	1,774	1,567	691	1,097	521	542	1,137
1926	1,956	1,607	816	1,388	540	515	1,255
1927	2,177	1,684	809	1,425	584	511	1,331
1928	2,179	1,657	750	1,154	615	525	1,287
1929	2,104	1,583	752	982	639	572	1,244
SALARIES AND WAGES PER TRAIN MILE RUN.							
	d.	d.	d.	d.	d.	d.	d.
1925	101.79	95.68	83.25	97.01	94.64	64.41	94.97
1926	109.08	99.32	93.48	121.18	102.32	62.00	103.42
1927	114.03	103.72	102.04	124.00	103.75	61.93	108.57
1928	113.26	104.77	97.84	107.60	102.32	56.58	106.01
1929	103.88	99.27	96.98	104.06	105.03	63.86	102.79

10. *Net Revenue.*—(i) *Net Revenue and Percentage on Capital Cost.* The following table shows the net sums available to meet interest charges, also the percentage of such sums upon the capital cost of construction and equipment of lines open for traffic in each State for the years 1925 to 1929 :—

RAILWAYS, STATE.—NET REVENUE AND PERCENTAGE THEREOF ON CAPITAL COST OF LINES OPEN, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
NET REVENUE.							
	£	£	£	£	£	£	£
1925	4,829,766	3,329,469	1,684,043	1,076,981	1,004,414	16,666	11,941,399
1926	4,419,039	3,122,914	977,298	a-2,843,412	828,243	41,153	6,545,235
1927	5,110,690	3,458,853	830,355	a-1,735,618	922,296	-11,840	8,574,736
1928	4,273,185	3,008,310	1,275,392	280,536	947,240	-19,142	9,765,521
1929	4,637,566	3,634,710	1,365,846	- 28,921	744,318	-59,797	10,293,722

PERCENTAGE OF NET REVENUE ON CAPITAL EXPENDITURE.

	%	%	%	%	%	%	%
1925	4.93	4.96	3.41	4.56	5.11	0.26	4.51
1926	4.26	4.54	1.90	a-11.14	4.07	0.63	2.37
1927	4.59	4.92	1.52	a- 6.17	4.42	-0.18	2.94
1928	3.68	4.16	2.27	1.08	4.43	-0.29	3.27
1929	3.78	4.97	2.34	- 0.11	3.32	-0.92	3.32

(a) See sub-section (ii), page 191.

These figures are also represented in the graphs which accompany this chapter.

The percentage of net revenue on capital expenditure for all States during the past five years reached its maximum during the year 1924-25, with a return of 4.51 per cent. The very low returns for 1925-26 and 1926-27 are due, in a large measure, to the unusual loading of the working expenses of those years in South Australia, which was alluded to in paragraph 8. But for this circumstance the percentages of net revenue on capital would have been 4.46 per cent. and 0.81 per cent. for South Australia and 3.81 per cent. and 3.61 per cent. respectively for the average of all States. Even these larger returns, however, would be insufficient to meet interest charges, for which particulars are included in the following sub-section.

(ii) *Net Revenue, Averages.* Tables showing the gross earnings and the working expenses per average mile worked and per train-mile run have been given previously. The net earnings, *i.e.*, the excess of gross earnings over working expenses per average mile worked and per train-mile run are shown in the following table :—

RAILWAYS, STATE.—NET REVENUE, AVERAGES, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
NET REVENUE PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1925	867	749	277	429	273	25	522
1926	772	690	159	a- 1,142	216	61	279
1927	889	748	133	a- 688	236	- 18	361
1928	733	645	201	111	239	- 29	407
1929	786	774	214	- 11	186	- 91	426

NET REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1925	49.74	45.71	33.38	38.85	49.77	2.95	43.58
1926	43.07	42.65	18.23	a-99.68	40.88	7.36	23.06
1927	46.59	46.04	16.74	a-59.85	41.97	- 2.18	29.48
1928	38.13	40.80	26.26	10.35	39.68	- 3.24	33.53
1929	40.65	48.52	27.56	- 1.20	30.64	-10.21	35.16

(a) See sub-section (ii), page 191.

11. **Interest.** The amount of interest payable on expenditure from loans on the construction and equipment of the railways, the amount of interest per average mile worked and per train-mile run in each State during the years ended 30th June 1925 to 1929 were as follows :—

RAILWAYS, STATE.—AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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AMOUNT OF INTEREST PAYABLE.

	£	£	£	£	£	£	£
1925	4,796,829	3,085,648	2,419,503	1,018,117	813,849	279,832	12,413,778
1926	5,249,710	3,077,905	2,564,181	1,195,108	860,225	283,799	13,230,928
1927	5,562,308	3,271,374	2,720,717	1,332,515	887,740	285,255	14,059,909
1928	5,882,452	3,324,270	2,827,223	1,271,686	920,569	284,076	14,510,276
1929	6,150,000	3,475,313	2,902,710	1,386,807	923,017	283,554	15,101,401

INTEREST PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£
1925	861	694	398	415	222	416	542
1926	917	680	417	480	224	422	566
1927	968	707	435	528	227	433	593
1928	1,010	713	446	503	232	432	605
1929	1,042	740	454	537	231	434	625

INTEREST PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1925	49.39	42.36	47.95	36.72	40.32	49.42	45.31
1926	51.16	42.03	47.83	41.89	42.45	45.89	46.61
1927	50.70	43.54	54.84	45.95	40.39	52.53	43.34
1928	52.48	45.08	58.21	46.92	38.55	48.12	49.82
1929	53.80	46.39	58.58	53.90	38.00	48.40	51.59

Interest charges in 1928-29, viz., £15,101,401, show an increase of £2,687,623 over the amount payable in 1924-25. The interest payable on the cost of construction and equipment, exclusive of expenditure from Consolidated Revenue (£5,599,297) for that purpose, was at the rate of 4.97 per cent. in 1928-29. If the abnormal charges to working expenses in South Australia be eliminated, the loss in that State for 1926-27 would be 3.93 per cent., and for all States, 1.21 per cent.

12. **Profit or Loss.**—The following table shows the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment for the last five years :—

RAILWAYS, STATE.—PROFIT OR LOSS, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.

	£	£	£	£	£	£	£
1925	+ 32,937	+ 243,821	— 735,460	+ 58,864	+ 190,565	— 263,166	— 472,439
1926	— 830,671	+ 45,009	— 1,586,883	a—4,038,520	— 31,982	— 242,646	— 6,685,693
1927	— 451,618	+ 187,479	— 1,890,362	a—3,068,133	+ 34,556	— 297,095	— 5,485,173
1928	— 1,609,267	— 315,960	— 1,551,831	— 991,150	+ 26,671	— 303,218	— 4,744,755
1929	— 1,512,434	+ 159,397	— 1,536,864	— 1,395,728	— 178,699	— 343,351	— 4,807,679

PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.

	%	%	%	%	%	%	%
1925	+0.03	+0.36	—1.49	+0.25	+0.97	—4.10	—0.18
1926	—0.80	+0.06	—3.08	a—15.82	—0.16	—3.76	—2.42
1927	—0.41	+0.27	—3.47	a—10.91	+0.17	—4.68	—1.88
1928	—1.38	—0.44	—2.76	—3.81	+0.12	—4.68	—1.59
1929	—1.23	+0.22	—2.64	—5.20	—0.80	—5.29	—1.55

(a) See sub-section (ii), page 191.

13. Traffic.—(i) *General.* Reference has already been made to the difference in the traffic conditions on many of the lines. These conditions differ not only in the several States, but also on different lines in the same States, and apply to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the interior traffic is light, as the density of population diminishes rapidly as the coastal regions are left behind, with a consequent diminution in the volume of traffic, while, in comparison with other more settled countries, there is but little back loading.

The following table gives particulars for the years 1925 to 1929:—

RAILWAYS, STATE.—TRAFFIC, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
NUMBER OF PASSENGER JOURNEYS.							
1925 ..	128,532,038	166,444,142	29,657,832	25,647,487	17,196,672	2,656,018	370,134,189
1926 ..	130,725,581	168,054,308	28,384,302	25,343,319	16,457,719	2,455,824	371,421,053
1927 ..	141,615,806	169,237,648	26,812,993	23,366,760	15,737,570	2,328,970	379,099,747
1928 ..	148,046,881	164,574,870	24,800,934	19,539,347	16,032,536	2,322,410	375,316,978
1929 ..	151,116,086	161,002,267	24,738,327	17,829,946	14,904,917	2,212,817	371,804,360
PER 100 OF MEAN POPULATION.							
1925 ..	5,652	9,959	3,483	4,715	4,670	1,244	6,249
1926 ..	5,687	9,979	3,296	4,594	4,422	1,132	6,206
1927 ..	6,032	9,886	3,039	4,126	4,155	1,084	6,213
1928 ..	6,168	9,451	2,758	3,594	4,087	1,076	6,029
1929 ..	6,160	9,143	2,699	3,057	3,672	1,022	5,867
PER AVERAGE MILE OF LINE WORKED.							
1925 ..	23,071	37,424	4,879	10,461	4,687	3,947	16,170
1926 ..	22,845	37,111	4,619	10,213	4,280	3,660	15,876
1927 ..	24,642	36,579	4,284	9,262	4,029	3,538	15,982
1928 ..	25,412	35,307	3,912	7,730	4,037	3,528	15,649
1929 ..	25,598	34,272	3,873	7,007	3,732	3,384	15,377
TONNAGE OF GOODS AND LIVE STOCK CARRIED.							
1925 ..	16,208,476	8,959,556	5,083,658	3,611,313	3,284,915	690,561	37,838,479
1926 ..	15,032,811	8,728,496	5,106,386	3,562,245	3,237,496	694,194	36,361,628
1927 ..	17,224,894	9,234,923	4,315,513	3,671,686	3,438,587	730,273	38,615,376
1928 ..	15,433,083	8,117,961	4,670,447	3,401,901	3,697,648	715,387	36,036,427
1929 ..	14,516,643	8,187,088	4,558,099	2,748,423	3,670,147	660,523	34,340,923
PER 100 OF MEAN POPULATION.							
1925 ..	719	536	597	664	892	323	645
1926 ..	654	518	593	646	870	320	608
1927 ..	734	539	489	648	808	340	633
1928 ..	643	466	519	591	943	331	579
1929 ..	632	465	497	471	904	305	542
PER AVERAGE MILE OF LINE WORKED.							
1925 ..	2,909	2,014	836	1,473	895	1,026	1,652
1926 ..	2,627	1,928	831	1,430	844	1,032	1,554
1927 ..	2,997	1,996	689	1,455	880	1,109	1,628
1928 ..	2,649	1,741	737	1,346	931	1,087	1,503
1929 ..	2,459	1,743	714	1,080	919	1,010	1,420

(ii) *Metropolitan and Country Passenger Traffic and Revenue.* A further indication of the difference in passenger traffic conditions is obtained from a comparison of the volume of metropolitan and suburban, and country traffic in each State. This is shown below for the year 1928-29 :—

**RAILWAYS, STATE.—METROPOLITAN AND SUBURBAN, AND COUNTRY
PASSENGER TRAFFIC AND RECEIPTS, 1928-29.**

Particulars.	Passenger Journeys.			Revenue.		
	Metropolitan and Suburban.	Country.	Total.	Metropolitan and Suburban.	Country.	Total.
	No.	No.	No.	£	£	£
N.S.W. ..	a140,158,238	10,957,848	151,116,086	3,026,019	4,212,310	7,238,329
Victoria ..	b152,840,373	8,161,894	161,002,267	2,768,624	2,453,600	5,222,224
Queensland ..	19,209,663	5,528,664	24,738,327	358,220	1,547,065	1,905,285
S. Australia ..	c 16,456,676	1,373,270	17,829,946	295,364	537,331	832,695
W. Australia	12,885,383	2,019,534	14,904,917	214,428	559,797	774,225
Tasmania ..	(d)	(d)	2,212,817	(d)	(d)	149,792
Total ..	(e)	(e)	371,804,360	(e)	(e)	16,122,550

(a) Within 34 miles of Sydney and Newcastle, including the Richmond line. (b) Within 20 miles of Melbourne. (c) Within 25 miles of Adelaide. (d) Not available. (e) Incomplete.

Although the number of passenger journeys recorded in the metropolitan area in Victoria is considerably greater than in New South Wales, it must be borne in mind that in the latter State other transport facilities, viz., tramways, motor-omnibuses, and ferries, are more extensively used.

A more detailed analysis of the passenger traffic for the years ended 30th June, 1928 and 1929, is contained in the Transport and Communication Bulletin No. 21 issued by this Bureau.

(iii) *Electrification of Suburban and Country Railways.* Reference to the electrification of the Melbourne and Sydney suburban railways will be found in Year Book No. 22, p. 285.

(iv) *Goods Traffic.* (a) *Classification.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried, and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities carried are available for all the States, and the following table shows the number of tons of various representative commodities carried, with the percentage of each class on the total for the financial year 1928-29 :—

RAILWAYS, STATE.—CLASSIFICATION OF COMMODITIES CARRIED, 1928-29.

State.	Coal, Coke, and Shale.	Other Minerals.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Com- modities.	Total.
New South Wales	5,801,880	2,405,723	1,767,585	235,097	179,960	729,581	3,346,817	14,516,648
Victoria ..	467,362	1,283,407	1,425,793	251,701	105,255	607,323	4,046,247	8,187,088
Queensland ..	645,236	457,307	1,684,039 ^a	^b	68,191	416,239	1,287,087	4,558,099
South Australia	194,265	655,104	537,080	69,964	37,585	144,291	1,110,134	2,743,423
Western Australia	252,963	688,233	1,010,622	73,011	22,433	107,932	1,514,053	3,670,147
Tasmania ..	294,179	^c	75,267	29,244	3,641	24,926	233,266	660,523
All States ..	7,655,885	5,439,774	6,500,386	709,017	417,065	2,030,292	11,538,504	34,340,923

TONS CARRIED.

PERCENTAGE OF TOTAL TONNAGE CARRIED.

	%	%	%	%	%	%	%	%
New South Wales	39.97	16.57	12.13	1.96	1.24	5.03	23.05	100.00
Victoria ..	5.71	15.67	17.42	3.07	1.29	7.42	49.42	100.00
Queensland ..	14.15	10.03	36.95 ^a	^b	1.50	9.13	28.24	100.00
South Australia	7.07	23.84	19.54	2.54	1.37	5.25	40.39	100.00
Western Australia	6.89	18.75	27.54	1.99	0.61	2.94	41.28	100.00
Tasmania ..	44.54	^c	11.39	4.43	0.55	3.77	35.32	100.00
All States ..	22.29	15.99	18.93	2.07	1.21	5.91	33.60	100.00

(a) Agricultural produce. (b) Included with "All other Commodities." (c) Included with coal, coke, and shale.

(b) *Revenue.* The following table shows the revenue derived from goods and live stock traffic during 1928-29 according to a classification which has been adopted by all States:—

RAILWAYS, STATE.—GOODS, ETC., TRAFFIC—REVENUE, 1928-29.

Class.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Total.
	£	£	£	£	£	£	£
General merchandise	6,196,543	4,061,959	3,204,885	1,283,006	1,563,830	208,508	16,518,731
Wheat ..	^a	750,102	^a	240,641	531,317	^a	d1,522,060
Wool ..	804,064	287,650	499,990	72,494	84,408	4,872	1,753,478
Live stock ..	1,315,552	664,729	792,301	211,676	137,422	21,880	3,143,560
Minerals—							
Coal, coke, and shale ..	1,426,780	159,132	243,555	113,779	136,587	633,442	2,113,275
Others ..	636,253	323,110	208,883	436,083	156,629	636,585	1,803,443
Total ..	10,379,192	6,251,682	4,949,614	2,358,579	2,610,193	305,287	26,854,547

(a) Included with General Merchandise. (b) Native coal. (c) Minerals other than native coal. (d) Incomplete.

In Victoria electric motor coaches are used for the transfer of parcels from the central stations to suburban stations, and to convey luggage and parcels between the two main terminal stations.

14. *Passenger-Mileage and Ton-Mileage.*—(i) *Passenger-Miles.* The subjoined table gives particulars of passenger-mileage in respect of the States of New South Wales, Victoria, South Australia, and Tasmania for the years 1924-25 to 1928-29.

RAILWAYS, STATE.—SUMMARY OF "PASSENGER-MILES," 1925 TO 1929.

Year ended 30th June—	Passenger-Train-Mileage.	Number of Passenger Journeys.	Total Passenger-Miles.	Amount Received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger Journey.	Average Earnings per Passenger-Mile.	Average Fare per Passenger Journey.	Density of Traffic per Average Mile Worked.
	Miles. (,000 omitted.)	No. (,000 omitted.)	No. (,000 omitted.)	£	No.	Miles.	d.	d.	No.

NEW SOUTH WALES.

1925	12,616	128,532	1,637,381	6,186,368	130	12.74	0.91	11.55	293,907
1926	14,038	130,726	1,675,091	6,311,690	119	12.81	0.90	11.59	292,732
1927	15,044	141,616	1,765,378	6,643,337	117	12.47	0.90	11.26	307,184
1928	16,036	148,047	1,809,307	6,998,147	113	12.22	0.93	11.34	310,569
1929	16,738	151,116	1,820,701	7,238,329	108	12.05	0.95	11.50	308,409

VICTORIA.

1925	11,602	166,444	1,426,411	5,380,887	123	8.57	0.91	7.76	320,718
1926	11,768	168,054	1,460,343	5,425,804	125	8.69	0.82	7.75	322,487
1927	11,846	169,238	1,476,307	5,641,032	125	8.72	0.92	8.00	319,064
1928	11,915	164,575	1,416,970	5,358,775	119	8.61	0.91	7.81	303,985
1929	12,104	161,002	1,420,570	5,222,224	117	8.82	0.88	7.78	302,392

SOUTH AUSTRALIA.

1925	3,460	25,647	302,185	1,114,558	97	11.78	0.89	10.43	123,255
1926	3,662	25,343	300,950	1,075,082	82	11.87	0.86	10.18	120,836
1927	4,002	23,367	280,082	1,005,624	70	11.99	0.86	10.33	111,022
1928	3,729	19,539	242,308	927,520	65	12.40	0.92	11.39	95,861
1929	3,563	17,830	219,857	815,323	62	12.33	0.89	10.98	86,403

TASMANIA.

1925	654	2,656	45,126	187,701	69	16.99	0.99	16.96	67,061
1926	596	2,456	39,342	173,488	66	16.02	1.06	15.67	58,466
1927	575	2,329	41,432	168,837	72	17.79	0.97	17.40	62,943
1928	615	2,322	37,971	167,234	62	16.35	1.05	17.28	57,685
1929	627	2,213	35,751	149,792	57	16.15	1.05	16.25	54,674

(ii) *Ton-Miles.* Particulars regarding total "ton-miles" are given in the following table for each of the years 1924-25 to 1928-29 in respect of all States with the exception of Queensland:—

RAILWAYS, STATE.—SUMMARY OF "TON-MILES," 1925 TO 1929.

Year ended the 30th June	Goods-Train-Mileage.	Total Tons Carried.	Total "Ton-miles."	Earnings.	Average Freight-paying Load Carried per "Train."	Average Haul per Ton.	Earnings per "Ton-mile."	Density of Traffic per Average Mile Worked.
	No. (000 omitted.)	No. (000 omitted.)	No. (000 omitted.)	£	Tons.	Miles.	d.	Tons.
NEW SOUTH WALES.								
1925	10,689	16,027	1,647,448	9,010,929	177	102.80	1.29	295,718
1926	10,587	14,809	1,509,555	8,941,123	165	101.93	1.39	263,802
1927	11,282	16,864	1,654,815	10,490,593	165	98.13	1.50	287,994
1928	10,861	15,223	1,550,375	10,228,586	158	101.84	1.56	266,408
1929	10,645	14,307	1,690,560	10,379,192	183	118.16	1.45	286,376
VICTORIA.								
1925	5,880	8,960	847,202	5,775,522	176	94.56	1.64	190,468
1926	5,808	8,728	776,251	5,565,451	166	88.93	1.72	171,434
1927	6,184	9,235	882,918	6,344,096	173	95.61	1.72	190,819
1928	5,780	8,118	737,856	5,763,701	164	90.89	1.87	158,304
1929	5,876	8,187	834,605	6,251,682	173	101.94	1.80	177,651
QUEENSLAND.(c)								
1928	7,734	4,670	552,442	4,824,885	71	120.67	2.09	89,872
1929	7,751	4,558	553,816	4,949,614	71	124.03	2.14	88,572
SOUTH AUSTRALIA.								
1925	3,193	3,611	393,649	2,607,623	134	109.00	1.59	160,559
1926	3,184	3,563	387,317	2,579,365	134	108.70	1.60	155,518
1927	2,957	3,672	389,443	2,632,866	141	105.66	1.65	154,451
1928	2,774	3,402	395,919	2,616,503	147	116.38	1.57	156,731
1929	2,202	2,748	337,639	2,358,579	156	122.91	1.66	132,694
WESTERN AUSTRALIA.								
1925	3,053	3,285	277,190	2,198,322	104	84.38	1.90	75,553
1926	2,976	3,237	272,611	2,174,895	106	84.20	1.91	71,048
1927	53,359	3,439	317,845	2,413,852	110	92.43	1.82	81,373
1928	63,723	3,693	357,966	2,619,816	111	96.81	1.76	90,145
1929	63,773	3,670	367,032	2,610,193	113	100.00	1.71	91,919
TASMANIA.								
1925	726	668	29,697	292,004	41	44.45	2.36	44,133
1926	762	669	32,000	293,078	42	47.82	2.23	47,556
1927	742	707	31,564	296,354	43	44.63	2.25	47,955
1928	814	690	34,180	310,348	42	49.54	2.17	51,926
1929	787	636	31,140	281,577	40	48.99	2.17	47,623

(a) Based on 10 months actual and 2 months estimated. (b) Includes "Assistant" and "Light" mileage. (c) Particulars for years prior to 1927-28 are not available.

In New South Wales the tonnage carried is exclusive of coal on which shunting and haulage charges only have been collected, and terminal charges have also been disregarded, but in the cases of South Australia and Tasmania such charges are included. Particulars for the latter State do not include live stock.

RAILWAYS, STATE.—EMPLOYEES, 1925 TO 1929.

State.	At 30th June—									
	1925.		1926.		1927.		1928.		1929.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales	5,672	36,455	5,794	38,263	6,004	39,488	6,052	38,053	5,995	37,535
Victoria ..	4,153	24,857	4,323	24,465	4,245	25,072	4,363	23,618	4,295	23,025
Queensland ..	3,362	16,522	3,617	18,419	3,565	16,105	3,478	16,146	3,403	15,467
South Australia ..	1,316	11,519	1,362	9,801	1,438	8,998	1,295	7,353	1,312	7,401
Western Australia	1,282	6,334	1,318	6,097	1,362	7,471	1,412	7,565	1,418	7,770
Tasmania ..	169	1,297	185	1,219	187	1,232	212	1,369	219	1,376
All States ..	15,954	96,984	16,599	98,864	16,801	98,366	16,812	94,101	16,642	92,574

In the period under review the totals of salaried and wages staffs decreased from 112,938 in 1925 to 109,216 in 1929, a decrease of 3·3 per cent.

(ii) *Average staff employed, 1928–29.* The number of employees at one point of time does not afford the best index of employment in railway work. It is considered that the following statement of the average number employed throughout the year indicates more accurately the labour requirements of the railways.

AVERAGE STAFF EMPLOYED, 1928–29.

State.	Operating Staff.		Construction Staff.		All Employees—Staff.	
	Salaried.	Wages.	Salaried.	Wages.	Salaried.	Wages.
New South Wales ..	6,011	37,961	164	3,268	6,175	41,229
Victoria ..	4,440	23,332	..	..	4,440	23,332
Queensland ..	3,473	15,106	80	2,092	3,553	17,198
South Australia ..	1,301	7,374	7	374	1,308	7,748
Western Australia ..	1,420	8,193	..	..	1,420	8,193
Tasmania ..	219	1,376	..	..	219	1,376
All States ..	16,864	93,342	251	5,734	17,115	99,076

In the States of Victoria, Western Australia, and Tasmania, railway construction work is not under the control of the Railways Commissioners.

18. Accidents.—(i) *Classification.* The following classification of accidents which occurred through the movement of rolling stock was adopted by each State in 1924–25. Particulars for 1928–29 are as under :—

RAILWAYS, STATE.—ACCIDENTS, 1929.

Particulars.	N.S.W.		Vic.		Q'land.		S. Aust.		W. Aust.		Tas.		All States.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Train accidents—														
Passengers ..	..	7	..	53	..	..	..	6	1	8	..	2	1	76
Employees ..	..	15	..	..	..	..	..	4	1	38	..	12	1	64
Accidents on line (other than train accidents)—														
Passengers ..	9	165	4	139	1	15	1	36	1	31	..	..	16	386
Employees ..	14	117	5	17	2	10	..	35	2	150	..	21	23	350
Others ..	16	67	..	..	..	2	1	1	..	..	..	2	17	72
Shunting accidents—														
Passengers ..	..	4	..	..	..	2	..	..	..	1	..	..	..	7
Employees ..	5	166	4	28	1	71	2	40	..	96	..	11	12	412
Other persons ..	..	5	2	2	1	1	1	2	..	..	..	..	4	10
Employees proceeding to or from their duty within railway boundaries ..	1	..	..	2	..	..	..	..	2	..	..	..	1	4
Persons killed or injured at crossings ..	7	15	18	35	4	14	9	30	5	20	2	7	45	121
Trespassers ..	9	4	13	4	10	3	6	2	5	2	..	..	43	15
Miscellaneous ..	..	..	..	1	..	7	..	..	..	11	..	16	..	35
Total ..	61	565	46	281	19	125	20	156	15	354	2	71	163	1,552

(ii) *Particulars for Quinquennium.* The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for each of the years 1925 to 1929 inclusive :—

RAILWAYS, STATE.—ACCIDENTS, 1925 TO 1929.

State.	In year ended 30th June—									
	1925.		1926.		1927.		1928.		1929.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	69	597	72	594	123	687	77	629	61	565
Victoria ..	47	293	78	498	53	292	60	238	46	281
Queensland ..	45	283	25	212	26	167	20	163	19	125
South Australia ..	26	203	22	329	22	263	23	255	20	156
Western Australia	16	208	12	341	17	365	16	351	15	354
Tasmania ..	2	17	4	39	..	44	1	18	2	71
All States ..	205	1,606	213	2,013	241	1,618	197	1,654	163	1,552

19. *Consumption of Oil and Fuel.*—The appended table shows the quantity and value of oil and fuel consumed by the various Government Railway Departments during the year 1928–29 :—

GOVERNMENT RAILWAYS.—CONSUMPTION AND VALUE OF OIL AND FUEL, 1928–29.

Government Railways.	Oil.						Coal.		
	Lubricating.			Fuel.					
	Gallons.	Value.	Average Cost per Gallon.	Gallons.	Value.	Average Cost per Gallon.	Tons.	Value.	Average Cost per Ton.
		£	s. d.		£	s. d.		£	£ s. d.
New South Wales	494,490	52,852	2 1. 65	969,050	45,072	0 11. 16	1,656,933	1,610,554	0 19 5. 23
Victoria ..	198,000	23,800	2 4. 85	1,078,200	44,920	0 10. 00	701,309	945,085	1 6 11. 42
Queensland ..	233,198	20,869	1 0. 48	184,336	12,912	1 4. 81	445,217	448,903	1 0 1. 98
South Australia	126,422	13,488	2 1. 61	(b)	(b)	(b)	202,382	433,349	2 2 9. 90
Western Australia	61,404	5,910	1 11. 10	430,502	23,077	1 0. 87	324,112	320,086	0 19 9. 02
Tasmania ..	33,334	3,831	2 3. 58	10,903	755	1 4. 62	51,893	69,288	1 6 8. 45
Total States	1,146,848	120,750	2 1. 27	2,672,991	126,736	0 11. 38	3,381,846	3,827,265	1 2 7. 61
Federal ..	25,385	3,163	2 5. 90	100,860	9,260	1 10. 03	33,132	73,167	2 2 2. 00
Grand Total, Australia ..	1,172,233	123,913	2 1. 37	2,773,851	135,996	0 11. 77	3,414,978	3,900,432	1 2 10. 12

(a) Lubricating oil used on loco. cars and wagons only.

(b) Not available.

(c) Exclusive of South Australia.

(d) Railways and Tramways.

The range in the average cost per ton of coal from 19s. 5d. in New South Wales to £2 2s. 10d. per ton for coal used on the South Australian Railways is attributable to the comparatively low haulage expenses incurred in the coal-producing States. The average cost of coal and oil during 1928–29 varied very little from that of 1927–28.

§ 4. Private Railways.

1. **Total Mileage Open, 1928-29.**—The bulk of the private railways in Australia have been laid down for the purpose of hauling timber, firewood, sugar-cane, coal, or other minerals, and they are not generally used for the conveyance of passengers or for public traffic. In many cases the lines are practically unballasted and easily removable.

The railways referred to in this section include only lines open to the public for general passenger and goods traffic. In previous issues of the Year Book particulars of lines used for special purposes only have also been shown, but, as complete figures for the year 1928-29 are not available, they have been omitted from this issue.

2. **Lines Open for General Traffic.**—The following statement gives a summary of the operations of private railways open for general traffic for the year 1929. More detailed information regarding these lines will be found in "Transport and Communication Bulletin No. 21" published by this Bureau.

RAILWAYS, PRIVATE.—SUMMARY, 1928-29.

State.	Companies from which returns were received.	Miles Open (Route).	Capital Cost.	Gross Revenue.	Working Expenses.	Train-Miles.	Passenger Journeys.	Tonnage of Goods, etc.	No. of Employees.	Rolling Stock.		
										Locomotives.	Coaches.	Other Vehicles.
	No.	Miles.	£	£	£	Miles.	No.	Tons.	No.	No.	No.	No.
New South Wales ..	9	142.03	2,543,040	243,664	188,103	348,642	814,324	847,614	216	49	37	772
Victoria ..	2	24.94	92,887	13,539	10,248	27,146	21,058	50,423	21	5	4	42
Queensland	16	273.73	468,702	39,150	36,181	73,208	21,396	325,562	73	21	19	392
South Australia ..	1	33.80	(a)	(a)	(a)	70,075	830	794,897	40	8	1	196
Western Australia	1	277.00	2,180,322	240,237	104,555	330,295	54,010	182,545	267	20	23	478
Tasmania	5	173.81	963,944	118,209	94,972	266,892	51,398	81,121	265	24	20	426
All States(b)	34	925.31	6,248,895	654,799	434,059	1,116,258	963,016	2,282,162	882	127	104	2,306

(a) Not available. (b) Incomplete.

The particulars given in the table are incomplete in respect of the States of New South Wales, Queensland, South Australia, and Tasmania. In New South Wales and Queensland several of these lines, although owned by private companies, are operated by the Government Railway Departments, and Government rolling stock is used thereon.

C. TRAMWAYS.

1. **Systems in Operation.**—(i) *General.* Tramway systems are in operation in all the States, and in recent years considerable extension has been made in the use of electrical traction, the benefit of which is now enjoyed by a number of the larger towns.

In many parts of Australia private lines used for special purposes in connexion with the timber, mining, sugar, or other industries are often called tramways, but they are more properly railways, and the traffic on them has nothing in common with that of the street tramways for the conveyance of passengers, which are dealt with in the present paragraph.

(ii) *Total Mileage Open and Classification of Lines.* The following tables show the total mileage of tramway lines open for general passenger traffic for the year 1928-29, also in Australia as a whole for the years 1924-25 to 1928-29, classified (a) according to the nature of the authority by which the lines are controlled; (b) according to the motive power utilized, and (c) according to gauge:—

TRAMWAYS.—ROUTE MILEAGE OPEN, 1928-29.

Nature of Motive Power, and Gauge.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Total, Australia.
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GOVERNMENT.

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	186.65	118.54	39.83	..	345.02
Steam	23.78	..	..	..	6.26	..	30.04
Cable .. ..	..	30.60	..	..	..	..	30.60
Horse .. ..	..	..	..	..	1.50	..	1.50
Total	210.43	149.14	..	..	47.59	..	407.16

MUNICIPAL.

Electric .. ..	..	..	55.73	75.79	8.61	30.23	170.36
Steam .. ..	..	..	6.65	..	..	..	6.65
Total .. ..	..	..	62.38	75.79	8.61	30.23	177.01

PRIVATE.

Electric .. ..	..	31.05	..	..	11.56	..	42.61
Steam	3.50	..	..	..	..	..	3.50
Total	3.50	31.05	..	..	11.56	..	46.11

ALL CONTROLLING AUTHORITIES.

Electric	186.65	149.59	55.73	75.79	60.00	30.23	557.99
Steam	27.28	..	6.65	..	6.26	..	40.19
Cable .. ..	..	30.60	..	..	..	..	30.60
Horse .. ..	..	..	..	..	1.50	..	1.50
Total	213.93	180.19	62.38	75.79	67.76	30.23	630.28

ACCORDING TO GAUGE.

Gauge—							
5 ft. 3 in. ..	..	5.18	..	..	..	..	5.18
4 ft. 8½ in. ..	213.93	175.01	55.73	75.79	..	..	520.46
3 ft. 6 in. ..	..	..	6.65	..	67.76	30.23	104.64
Total	213.93	180.19	62.38	75.79	67.76	30.23	630.28

TRAMWAYS.—ROUTE MILEAGE OPEN, AUSTRALIA, 1924-25 TO 1928-29.

Nature of Motive Power, Controlling Authority, and Gauge.			1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
ACCORDING TO MOTIVE POWER.							
			Miles.	Miles.	Miles.	Miles.	Miles.
Electric	..	..	502.66	519.06	538.42	555.33	557.99
Steam	..	..	79.23	75.46	70.55	39.18	40.19
Cable	..	..	45.58	38.53	33.68	30.06	30.60
Horse	..	..	7.39	1.50	2.51	2.51	1.50
Total	..	..	634.86	634.60	645.16	627.08	630.28

ACCORDING TO CONTROLLING AUTHORITY.

Government	..	..	423.56	421.42	431.05	405.21	407.16
Municipal	..	..	165.54	167.42	168.70	173.60	177.01
Private	..	..	45.76	45.76	45.41	48.27	46.11
Total	..	..	634.86	634.60	645.16	627.08	630.28

ACCORDING TO GAUGE.

Gauge—							
5 ft. 3 in.	..	..	5.18	5.18	5.18	5.18	5.18
4 ft. 8½ in.	..	..	512.59	517.92	526.61	516.80	520.46
3 ft. 6 in.	..	..	99.71	99.00	100.87	105.10	104.64
2 ft. 0 in.	..	..	17.38	12.50	12.50	..	..
Total	..	..	634.86	634.60	645.16	627.08	630.28

The mileage of electric tramways has steadily increased during the period dealt with above, due principally to the conversion of the Newcastle steam tramways and the Melbourne cable systems to electrical traction. The decrease in the Government-controlled tramways in 1925 was in some measure due to the transfer of the Brisbane tramways from the Brisbane Tramway Trust to the Brisbane City Council.

(iii) *Cost of Construction and Equipment.* The table hereunder shows, as far as information is available, the total cost of construction and equipment of all tramways to the 30th June, 1929, classified according to the nature of the motive power and the controlling authority.

TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1928-29.

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
GOVERNMENT.							
	£	£	£	£	£	£	£
Electric	11,029,890	5,903,993	..	..	1,069,352	..	18,003,235
Steam	426,299	..	..	..	63,052	..	489,351
Cable	..	1,560,788	..	..	..	..	1,560,788
Horse	..	..	..	..	10,296	..	10,296
Total	11,456,189	7,464,781	..	..	1,142,700	..	20,063,670
MUNICIPAL.							
Electric	..	..	2,214,637	3,527,710	157,978	567,841	6,468,166
Steam	..	..	53,235	..	..	..	53,235
Total	..	..	2,267,872	3,527,710	157,978	567,841	6,521,401

TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1928-29—*continued.*

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
PRIVATE.							
Electric	£	£	£	£	£	£	£
Steam ..	..	478,601	..	..	452,821	..	931,422
	(a)	..	..	..	..	..	..
Total ..	(a)	478,601	..	..	452,821	..	931,422

ALL CONTROLLING AUTHORITIES.

Electric	11,029,890	6,382,594	2,214,637	3,527,710	1,680,151	567,841	25,402,823
Steam ..	(b) 426,299	..	53,235	..	63,052	..	542,586
Cable ..	..	1,560,788	..	..	..	..	1,560,788
Horse ..	..	..	..	..	10,296	..	10,296
Total ..	11,456,189 (b)	7,943,382	2,267,872	3,527,710	1,753,499	567,841	27,516,493

(a) Not available. (b) Incomplete.

2. New South Wales.—(i) *Government Tramways.*—(a) *General.* The tramways, with some comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners. In Sydney and suburbs the Government tramways are divided into seven distinct systems, five of which are operated by electricity and two by steam. The conversion of the Newcastle system from steam to electric traction has been undertaken, and at 30th June, 1929, 23.74 miles (route) were completed and opened for traffic.

(b) *Particulars of Working.* The subjoined statement gives particulars of the working of the electric and steam tramways under Government control in 1928-29 :—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—RETURNS FOR 1928-29.

Line.	Mileage Open for Traffic.		Total Cost of Construction and Equipment. (a)	Gross Revenue.	Working Expenses.	Net Earnings.	Interest.	Profit or Loss.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.
	Route.	Track.								
	Miles.	Miles.	£	£	£	£	£	£	%	%
Electric	180.65	333.32	11,029,890	4,402,045	3,751,930	650,115	592,807	57,308	85.23	5.89
Steam	23.78	25.21	426,299	55,845	82,009	— 26,164	23,190	-49,354	146.85	— 6.14
Total	210.43	358.53	11,456,189	4,457,890	3,833,939	623,951	615,997	7,954	86.00	5.45

(a) Exclusive of Stores Advance Account (£287,000).

(c) *Capital Cost.* The capital cost shown in the preceding table was made up as follows:—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—CAPITAL COST, 1929.

Permanent Way.	Rolling Stock.	Power-houses, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Total.
£	£	£	£	£	£	£
5,774,433	2,525,358	2,627,403	265,300	261,303	2,392	11,456,189

The average cost per mile open was £27,439 for permanent way, and £26,998 for all other charges, making a total of £54,437 per route mile.

(d) *Summary, Government Tramways.* The following table gives a summary of the operations of all Government tramways for the years 1925 to 1929:—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—SUMMARY, 1925 TO 1929.

Year ended 30th June—	Mileage Open for Traffic. (Route.)	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.	Passengers carried.	Persons employed.
	Miles.	£	£	£	£	£	%	%	No. 000	No.
1925 ..	228.46	10,844,454a	3,619,272	3,174,862	444,410	546,489	87.72	4.10	339,577	11,633
1926 ..	228.55	11,147,523a	3,619,496	3,319,996	299,500	563,137	91.73	2.69	339,412	11,459
1927 ..	228.50	11,299,050a	3,806,098	3,487,834	318,264	573,453	91.64	2.82	347,231	11,697
1928 ..	209.58	11,322,078a	4,556,561	3,937,356	619,205	576,702	86.41	5.47	346,014	11,031
1929 ..	210.43	11,456,189a	4,457,890	3,833,939	623,951	615,997	86.00	5.45	333,476	11,082

(a) £47,455 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

The cost of construction and equipment is exclusive of the amount of the Stores Advance Account (£287,000).

(e) *Sydney Tramways.* Official Year Book No. 15, p. 589, gave a short account of the progress of the Sydney Tramway System. Owing to limitations of space this information cannot be repeated, but the subjoined table shows certain important particulars for the years 1925 to 1929 inclusive.

ELECTRIC TRAMWAYS.—SYDNEY.—SUMMARY 1925 TO 1929.

Particulars.	Year ended 30th June—				
	1925.	1926.	1927.	1928.	1929.
Mileage open for traffic—					
Route miles	161.24	161.83	162.11	162.05	162.66
Track miles	287.52	288.85	289.19	289.50	291.66
Total cost of construction and equipment £	9,168,939	9,473,497	9,889,857b	9,976,761b	10,060,822b
Current used for traction purposes kilowatt hours	118,631,086a	109,131,602a	123,197,596a	127,163,518a	125,995,725a
Tram-miles run No.	31,238,517	31,087,894	31,036,469	31,511,169	31,258,936
Passengers carried No.	314,563,586	313,216,842	320,903,528	322,025,235	312,032,469
Gross revenue £	3,331,701	3,316,312	3,462,806	4,135,337	4,061,459
Working expenses £	2,823,510	2,878,855	3,060,254	3,465,920	3,471,394
Net revenue £	508,191	437,457	396,552	669,417	590,065
Percentage of working expenses on gross revenue %	84.75	86.81	88.55	83.81	85.47
Cars in use	1,562a	1,567a	1,594a	1,578a	1,703a
Persons employed	10,255a	11,130a	11,512a	10,911a	10,968a

(a) Includes portion of Newcastle line in process of electrification. (b) Includes Stores Advance account.

(ii) *Private Tramways.* A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of $3\frac{1}{2}$ miles, where it connects with the Parramatta River steamers which convey passengers and goods to and from Sydney. This line, which has a gauge of 4 ft. $8\frac{1}{2}$ in., was opened for traffic in 1883. In 1929 the number of tram-miles run was 20,440, and the number of passengers conveyed 138,968.

3. *Victoria.*—(i) *General.* In Melbourne there are several tramway systems carried on under the control of various authorities, the most important being the cable and electric systems worked by the Melbourne and Metropolitan Tramways Board, to which reference will be made further on. There were also, at 30th June, 1929, two lines of electric tramways, viz.:—(a) St. Kilda to Brighton, and (b) Sandringham to Beaumaris, both of which belong to and are operated by the Railways Commissioners. In addition there are systems of electric tramways at Ballarat, Bendigo, and Geelong, constructed and run by private companies.

Numerous tramways have been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890. These, however, are of the nature of the private railways referred to previously.

(ii) *Melbourne and Metropolitan Tramways Board.* (a) *General.* A short account of the formation of the Melbourne Tramway and Omnibus Company, and of the Tramways Board, will be found in earlier issues of this work.

(b) *Cable Tramways.* (1) *Services.* The complete system consists of 30.60 miles of double track of 4-ft. $8\frac{1}{2}$ in. gauge connecting the city of Melbourne with the nearer suburbs.

(2) *Particulars of Working.* A summary for the years 1925 to 1929 is given hereunder:—

CABLE TRAMWAYS.—MELBOURNE.—SUMMARY, 1925 TO 1929.

Year ended 30th June—	Mileage Open (Route).	Tram Miles run during Year.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Revenue.	Number of Employees at end Year.
	Miles.	Miles.	No.	£	£	%	No.
1925 ..	45.58	15,285,913	148,316,398	1,192,103	1,011,630	84.86	3,136
1926 ..	38.58	12,393,911	127,882,115	1,048,414	847,102	80.79	2,520
1927 ..	33.68	9,817,468	99,978,416	1,012,946	702,749	69.38	2,614
1928 ..	30.06	8,410,528	83,004,759	843,800	608,061	72.06	1,872
1929 ..	30.60	8,151,392	77,930,235	793,122	596,872	75.26	1,771

The reduction of the operating results in recent years is due partly to the progress made in the scheme of conversion to electrical traction.

(c) *Electric Tramways.* (1) *Services Operated.* The system controlled by the Melbourne and Metropolitan Tramways Board at 30th June, 1929, consisted of the six services taken over from the various controlling authorities at the date of the formation of the Board, viz. (a) The Prahran and Malvern Tramways; (b) The Hawthorn Tramways; (c) The Melbourne, Brunswick and Coburg Tramways; (d) The Fitzroy, Northcote, and Preston Tramways; (e) The Footscray Tramways; and (f) the North Melbourne-Essendon Tramway, which, together with various extensions and conversions from cable to electric traction on the St. Kilda, Brighton Road, Prahran and Toorak and Richmond lines, make an aggregate route mileage of 108.75 miles, all of 4 ft. $8\frac{1}{2}$ in. gauge.

(2) *Particulars of Working.* A summary of operations for the last five years is given hereunder:—

MELBOURNE TRAMWAYS BOARD.—ELECTRIC SERVICES.—OPERATIONS, 1925 TO 1929.

Year open 30th June—	Mileage for Traffic (Route).	Total Cost of Construction and Equipment	Current used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	£	£
1925 ..	82.50	3,242,485	20,297,259	8,426,519	80,435,680	756,163	649,644	79,482	27,037
1926 ..	91.98	4,040,482	27,041,867	10,657,728	99,017,938	1,007,210	816,178	147,997	43,035
1927 ..	102.14	4,647,497	34,393,346	13,387,869	118,358,967	1,429,015	963,558	240,922	224,535
1928 ..	108.74	5,221,586	45,086,642	15,216,696	132,305,672	1,602,068	1,057,066	654,175	-109,178
1929 ..	108.75	5,568,006	44,347,542	15,640,465	133,831,902	1,629,470	1,086,948	693,676	-151,154

(—) Indicates loss.

(iii) *Other Government Tramways.* The Victorian Railway Department owns and operates two lines of electric street railways, viz., St. Kilda to Brighton (5.18 miles of 5-ft. 3-in. gauge) and Sandringham to Beaumaris (4.61 miles of 4-ft. 8½-in. gauge), a total route mileage of 9.79 miles.

Particulars of the operations of these tramways for the years 1924–25 to 1928–29 are contained in the tables hereunder.

ELECTRIC TRAMWAY.—ST. KILDA-BRIGHTON.—1925 TO 1929.

Year ended 30th June—	Total Cost of Construction and Equipment.	Current used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit or Loss.
	£	Kilowatt-hours.	No.	No.	£	£	£	£
1925 ..	193,316	1,524,151	562,220	5,737,101	58,038	48,942	8,911	185
1926 ..	193,607	1,580,283	564,085	5,910,741	56,533	48,534	9,277	1,278
1927 ..	195,403	1,640,932	568,184	5,856,796	55,594	48,079	9,347	1,832
1928 ..	202,182	1,677,880	566,243	5,561,619	55,202	46,661	9,525	984
1929 ..	201,908	1,734,426	561,593	5,880,698	56,513	49,728	9,644	2,359

(—) Indicates loss.

ELECTRIC TRAMWAY.—SANDRINGHAM-BEAUMARIS (a).—1925 TO 1929.

Year ended 30th June—	Total Cost of Construction.	Current used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit or Loss.
	£	Kilowatt-hours.	No.	No.	£	£	£	£
1925 ..	101,417	335,140	127,962	1,475,261	13,048	10,699	5,326	2,977
1926 ..	99,677	330,390	127,368	1,371,558	12,061	13,233	5,514	6,686
1927 ..	134,024	464,356	182,331	1,809,880	15,209	15,198	6,556	6,545
1928 ..	134,033	473,968	189,785	1,716,524	15,076	14,834	6,817	6,575
1929 ..	134,079	475,582	188,366	1,606,685	16,987	13,102	6,800	2,915

(—) Indicates loss.

(a) The extension from Black Rock to Beaumaris, 2.20 miles in length, was opened for traffic on 1st September, 1926.

(iv) *Private Tramways.* Two systems of tramways are owned and operated by private companies, viz., Ballarat and Bendigo (21.25 miles) and Geelong (9.80 miles); giving a total route mileage of 31.05 miles. Electrical traction is used on each of these lines which are constructed to the 4-ft. 8½-in. gauge.

(v) *Summary for all Electric Tramways.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1925 to 1929 inclusive:—

ELECTRIC TRAMWAYS.—VICTORIA.—SUMMARY, 1925 TO 1929.

Year ended 30th June—	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	117.69	3,913,353	24,114,494	10,472,995	95,806,588	910,601	785,175	421	3,003
1926	127.17	4,716,775	31,020,604	12,709,671	114,692,993	1,159,557	960,485	492	3,607
1927	139.53	5,389,654	38,582,105	15,504,164	135,153,262	1,583,838	1,108,664	530	4,087
1928	149.26	6,016,926	49,649,967	17,461,458	149,372,032	1,762,079	1,209,175	596	4,018
1929	149.59	6,382,594	49,186,768	17,968,152	150,377,655	1,793,541	1,249,582	622	3,942

4. *Queensland.*—(i) *General.* The electric tramways in the city and suburbs of Brisbane were controlled by a private company, with head office in London, until the 31st December, 1922, on which date they were purchased by the Queensland Government which, under the provisions of the Brisbane Tramway Trust Act 1922, appointed a Trust to control and operate the system until 1st December, 1925, on which date the control passed to the Brisbane City Council. Under the provisions of the Brisbane City Council Act, 1925, the Council took over the liabilities of the Tramway Trust to the extent of £2,000,000 which had been incurred in London, and assumed complete control of the system. The total length of the Brisbane tramways was 55.73 route miles at 31st December, 1929. A steam tramway having a length of 6.65 route miles is in operation at Rockhampton.

(ii) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. Cost of construction and equipment to the end of the year 1929 was £2,214,637, the gauge of line being 4-ft. 8½-in. The following table gives a summary for the calendar years 1925 to 1929:—

ELECTRIC TRAMWAYS.—BRISBANE.—SUMMARY, 1925 TO 1929.

Year ended 31st Dec.—	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	50.33	1,846,029	14,800,083	5,915,844	82,514,979	707,500	564,584	225	1,837
1926	52.25	2,053,318	15,683,288	6,301,126	81,802,945	767,708	588,262	248	1,821
1927	53.53	2,050,155	17,409,241	6,535,333	78,057,620	814,312	613,285	260	1,659
1928	55.41	2,195,340	19,092,514	6,570,228	77,703,264	810,954	594,126	275	1,611
1929	55.73	2,214,637	19,723,299	6,616,426	76,117,048	794,470	584,390	275	1,552

(a) Includes motor omnibuses.

(iii) *Rockhampton Municipal Tramway.* This tramway was opened for traffic in 1909, the motive power being steam. The length of line is 6.65 route miles, and the gauge 3 ft. 6 in. The capital cost to 31st December, 1929, was £53,235. During the year 1929, 1,673,957 passengers were carried, the revenue being £15,678 and working expenses £16,177. The number of the staff at the end of the year was 42.

(iv) *Sugar-Mill Tramways.* In various parts of Queensland there are tramways used in connexion with the sugar-milling industry, chiefly for the purpose of hauling cane. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms.

5. *South Australia.*—(i) *Electric Tramways.* The tramways in Adelaide and suburbs are controlled by a Municipal Tramways Trust created in 1907. Prior to this year, the system was run with horse-traction by several private companies. Electric traction was inaugurated in 1909, and at the 31st July, 1929, the Tramways Trust operated a total route mileage of 75.79 miles of 4-ft. 8½-in. gauge. A summary for the years 1925 to 1929 is given in the subjoined table:—

ELECTRIC TRAMWAYS.—ADELAIDE.—SUMMARY, 1925 TO 1929.

Year ended 31st July—	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	72.20	2,874,037	18,456,574	7,222,292	63,152,810	640,335	467,751	249	1,563
1926	73.05	2,997,976	19,303,228	7,393,122	66,207,356	661,058	472,412	255	1,556
1927	73.05	3,073,359	19,956,323	7,386,620	67,569,749	674,884	483,939	259	1,690
1928	74.17	3,176,738	20,327,743	7,440,540	68,546,189	695,649	496,194	260	1,781
1929	75.79	3,527,710	20,814,717	7,416,441	66,577,704	677,513	501,362	282	1,982

(ii) *Horse Tramways.* There are also 19.86 miles of Government horse-tramways in country districts, worked in connexion with the railway system, of which 17.36 miles are used for passenger service, and 2.50 miles for special purposes.

6. *Western Australia.*—(i) *Government Tramways.* (a) *General.* Apart from the electric tramways, there are several Government tramways, with a total length of 7.76 miles of 3 ft. 6 in. gauge. The lines are under the control of the Department of Works and Labour, and the total mileage of 7.76 miles is made up of several short lengths worked by steam or horses in connexion with the jetties at certain ports, and providing communication between the jetties and the goods sheds or warehouses.

(b) *Steam and Horse Tramways.* The capital cost of the Government steam or horse tramways up to the 30th June, 1929, was £73,348, the gross revenue for 1928–29 being £3,856, and the working expenses £1,736. These amounts are in some instances inclusive of revenue from jetty charges and of working expenses in connexion with such services.

(c) *Perth Electric Tramways.* These tramways were opened for traffic by a private company on the 24th September, 1899, and the system was subsequently extended to many of the suburbs. Control was taken over by the Government on the 1st July, 1913, and the tramways are now worked in conjunction with the Government railways. The gauge of line is 3 ft. 6 in. The following table shows particulars of working for the years ended 30th June, 1925 to 1929:—

ELECTRIC TRAMWAYS.—PERTH.—1924–25 TO 1928–29.

Year ended 30th June—	Mileage open for Traffic.	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
		£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925 ..	34.28	899,741	8,296,746	3,040,505	28,894,525	281,612	236,008	113	566
1926 ..	34.34	949,929	8,246,630	3,010,253	29,599,785	286,707	240,953	113	536
1927 ..	36.68	983,140	8,371,890	2,995,769	30,541,079	294,068	241,280	113	725
1928 ..	39.28	1,060,247	9,002,660	3,188,087	32,657,626	318,957	259,677	123	724
1929 ..	39.83	1,069,352	9,538,040	3,345,929	35,031,734	342,788	281,257	123	634

(ii) *Private Tramways.* Electric Tramways with a route mileage at 31st August, 1929, of 8.61 miles, and controlled by the municipal authorities, are in operation in Fremantle. In Kalgoorlie and Boulder a private company controls the electric tramways, of which at the end of 1929 the length of line was 11.56 miles (route). All the foregoing lines are of 3-ft. 6-in. gauge.

(iii) *Summary, all Electric Tramways.* The subjoined table gives a summary for all electric tramway systems in the State for the years 1925 to 1929 :—

ELECTRIC TRAMWAYS.—WESTERN AUSTRALIA.—SUMMARY, 1925 TO 1929.

Year.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	57.55	1,504,845	10,389,250	3,975,099	37,237,791	365,156	306,378	178	751
1926	57.61	1,559,483	10,311,919	3,940,741	37,841,434	368,290	311,772	178	709
1927	59.60	1,599,105	10,237,513	3,939,061	38,924,077	376,578	310,967	173	891
1928	61.93	1,669,242	10,989,904	4,141,242	41,040,909	403,845	330,705	183	897
1929	60.00	1,680,151	11,763,248	4,303,871	43,198,615	423,368	353,224	183	816

7. *Tasmania.*—(i) *Electric Tramways.* In Hobart there is a system of electric tramways consisting of 18.50 route miles of 3-ft. 6-in. gauge controlled by the Hobart Municipal Council. The Launceston City Council operates tramways in Launceston having a length of 11.73 miles of 3-ft. 6-in. gauge.

The following table gives a summary of the working of the two systems for the years 1925 to 1929 :—

ELECTRIC TRAMWAYS.—TASMANIA.—SUMMARY, 1925 TO 1929.

Year.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	26.75	566,717	3,510,994	1,886,231	17,725,007	180,345	137,002	90	399
1926	26.86	542,309	3,310,493	1,776,052	16,972,174	178,191	142,141	89	385
1927	26.86	561,857	3,332,102	1,791,276	17,009,211	181,445	140,386	89	367
1928	28.76	558,323	3,623,468	1,805,339	17,206,196	182,769	132,813	90	377
1929	30.23	567,841	4,030,802	1,818,460	17,334,091	171,664	138,808	90	357

(ii) *Other Tramways.* There are several lines of privately-owned steam tramways. These are dealt with in § 4, Private Railways, as they do not come within the category of street tramways for the conveyance of passengers.

8. *Electric Tramways, Australia.*—(i) *Summary for 1929.* The subjoined table gives details regarding all electric tramways in Australia. The returns for tramways in Ballarat and Bendigo, in Brisbane, in Kalgoorlie, and in Hobart are for the calendar year 1929; for other tramways they refer generally to the financial year 1928-29.

ELECTRIC TRAMWAYS.—AUSTRALIA.—SUMMARY, 1928-29.

State.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current used for Traction purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Gross Revenue.	Cars, Motors and Trailers.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	%	No.	No.
N.S.W. . .	186.65	11,029,890	125,995,725	33,639,480	328,819,612	4,402,045	3,751,930	85.23	1,703	10,968
Victoria . .	149.59	6,382,594	49,186,768	17,968,152	150,377,655	1,793,541	1,249,582	69.67	622	3,942
Q'land . .	55.73	2,214,637	19,723,299	6,616,426	76,117,048	794,470	584,390	73.56	275	1,552
S. Aust.	75.79	3,527,710	20,814,717	7,416,441	66,577,704	677,613	501,362	74.00	282	1,932
W. Aust.	60.00	1,680,151	11,763,248	4,303,871	43,198,615	423,368	353,224	83.43	183	816
Tasmania	30.23	567,841	4,030,802	1,818,460	17,334,091	171,664	138,808	80.66	90	387
All States	557.99	25,402,823	231,514,559	71,762,830	682,424,725	8,262,601	6,579,296	79.63	3,155	19,647

(ii) *Summary for Years 1925 to 1929.* The following table gives particulars of the operations of electric tramways in Australia for the years 1925 to 1929 :—

ELECTRIC TRAMWAYS.—AUSTRALIA.—1925 TO 1929.

Particulars.	1925.	1926.	1927.	1928.	1929.
Mileage open for Traffic (Route) Miles	502.66	519.06	538.42	555.83	557.99
Total Cost of Construction and Equipment £	21,007,915	22,444,569	23,453,826	24,511,459	25,402,823
Current used for Traction Purposes Kil. hrs.	189,302,481	188,761,134	212,714,880	231,752,114	231,514,559
Tram-miles run No.	61,941,856	65,802,995	68,726,257	71,449,202	71,762,830
Passengers carried "	621,691,985	647,351,333	677,710,965	695,233,793	682,424,725
Gross Revenue £	6,248,686	6,633,563	7,864,964	8,350,389	8,262,001
Working Expenses £	5,170,814	5,510,118	5,941,835	6,603,562	6,579,296
Percentage of Working Expenses on Gross Revenue %	82.75	83.06	80.68	79.08	79.63
Cars, Motors and Trailers No.	2,720	2,824	2,905	2,982	3,155
Persons Employed "	17,808	19,208	20,206	19,595	19,647

D. AIRCRAFT.

1. *Historical.*—A short review of the progress of civil aviation in Australia up to the date of foundation of the Department of Civil Aviation was given in Official Year Book No. 16, pp. 334–5, but limitations of space preclude its repetition in the present volume.

2. *Foundation of Civil Aviation Department.*—(i) *Creation.* A brief account of the foundation and the objects of this Department will be found in Official Year Book No. 19, p. 299.

(ii) *Accidents Investigation Committee.* Under powers conferred by the *Air Navigation Act 1920*, a committee consisting of engineering and aircraft experts was appointed early in 1927 to inquire into and report upon accidents which occur to service and civil aircraft, and on 13th October, 1927, the Air Navigation (Investigation of Accidents) Regulations were promulgated.

3. *Activities of Civil Aviation Department.*—(i) *Aerodromes and Landing Grounds.* Amongst the various activities have been the acquisition and preparation of civil aviation landing grounds, which have now been established over the following approved routes :—(a) Perth to Derby (1,467 miles); (b) Derby to Wyndham (610 miles); (c) Perth to Adelaide (1,453 miles); (d) Adelaide to Sydney (790 miles); (e) Sydney to Brisbane (550 miles); (f) Brisbane to Charleville (444 miles); (g) Charleville to Camooweal (825 miles); (h) Camooweal to Daly Waters (475 miles); (i) Daly Waters to Birdum Creek (50 miles); (j) Cloncurry to Normanton (215 miles); (k) Melbourne to Hay (233 miles); (l) Mildura to Broken Hill (189 miles); and (m) Melbourne to Charleville via Cootamundra (900 miles).

Preliminary surveys of various additional routes also have been made, but no expenditure has yet been incurred in the preparation of landing grounds in connexion therewith. The most important of these new routes is that from Melbourne to Launceston via (1) Flinders Island and North-East coast of Tasmania (293 nautical miles), and (2) via King Island and North-West coast (299 nautical miles).

Up to the 31st May, 1930, 178 landing grounds have been acquired or leased by the Government and prepared for civil aviation purposes. There were also 37 Public Aerodrome Licences in force.

(ii) *Aerial Services.* (a) *General.* In addition to providing a regular and speedy transport service over fixed routes, it was considered that the granting of contracts for subsidized aerial services would give an impetus to the development of civil aviation in Australia, while the trained flying and ground personnel would provide a technical reserve for air defence in case of war.

At 30th April, 1930, three subsidized contractors were operating under contracts which, with the exception of the Adelaide-Perth service, provided that up to 100 lb. of mail is to be carried free on each trip, the letters for transmission being surcharged 3d. per $\frac{1}{4}$ ounce. The total route mileage of these services is 5,879 miles.

The various regular air services over prepared routes have completed 3,540,473 passenger-miles, and carried 23,508 paying passengers over various stages. Over 35,000 lbs. of letters have also been carried.

All pilots and mechanics employed on these services must join the Air Force Reserve when the Reserve is constituted.

(b) *Aerial Mail Services at 30th April, 1930.* The following aerial mail services were in operation at 30th April, 1930.

(1) *Subsidized Services.* Perth to Derby (W.A.), 1,467 miles; Brisbane to Camooweal (Q.), 1,269 miles; Cloncurry to Normanton (Q.), 215 miles; Camooweal (Q.) to Daly Waters (N.T.), 475 miles; Adelaide (S.A.) to Cootamundra (N.S.W.), via Mildura, Hay and Narrandera, 578 miles; Mildura (V.) to Broken Hill (N.S.W.), 189 miles; Adelaide (S.A.) to Perth (W.A.), 1,453 miles. Short descriptions of these subsidized services were given in Year Book No. 22, but considerations of space preclude their repetition in the present volume.

(2) *Unsubsidized Services.* During the past twelve months several companies have inaugurated regular commercial air services in various parts of the Commonwealth without the assistance of Government subsidies. Briefly, such services are as follows:—Adelaide to Renmark (S.A.), Adelaide to Mt. Gambier (S.A.), Adelaide to Streaky Bay (S.A.), Adelaide (S.A.) to Broken Hill (N.S.W.), Brisbane to Toowoomba (Q.), Melbourne (V.) to Adelaide (S.A.), Sydney (N.S.W.) to Brisbane (Q.), and Brisbane to Townsville (Q.). The total distance of these routes is 2,709 miles.

(c) *Aerial Ambulance Service.* Following an agreement made between the Queensland and Northern Territory Aerial Services Ltd. and the Australian Inland Mission, an aerial ambulance service to provide medical service where required in Western and Northern Queensland and operating from a base at Cloncurry was inaugurated on the 17th May, 1928. The aircraft company agreed to provide the aircraft and pilot and the mission authorities the doctor. The scheme has proved most successful and many instances are recorded of lives being saved by the services thus made available. During the first twelve months from the inception of the service approximately 18,000 miles were flown.

(d) *Reliability.* During 1929 over 538,400 miles were flown by the three subsidized companies operating regular air services without a fatal accident. The total mileage flown by all civil aircraft during the same period was upwards of 2,700,000 miles, and nine fatal accidents occurred, an average of one fatal accident for every 300,000 miles flown.

4. *Aircraft Construction.*—With the increase in the number of aircraft used in Australia attention is being given to the question of local production. Aircraft have been manufactured in Australia for a number of years, and locally built aircraft are in use on certain subsidized routes, but development has not yet reached a completely organized stage.

5. Training of Air Pilots.—(i) *The Associated Aero Clubs.* The Associated Australian Aero Clubs provide facilities in the capital cities of all States, with the exception of Tasmania, for flying instruction and practice. Training operations have not yet been commenced in Tasmania, but a start will be made in Launceston at an early date. At the end of May, 1930, 449 pupils had passed through the various flying training organizations and had qualified for Class "A" (Private) Pilots' licences.

The Commonwealth Government renders the various clubs assistance by providing D.H. 60 "Moth" aeroplanes and spare engines, hangar accommodation, the free use of aerodromes, suitable club houses which are leased to the clubs, and bonuses for practice flying carried out and for each pupil trained to a standard that will enable him to obtain a Class "A" (Private) Pilot's Licence. The Sydney body (the Aero Club of New South Wales) is a most successful organization. To 31st May, 1930, 190 pupils, including nine lady members, had graduated and received Class "A" Pilots' licences, while many graduates had completed advanced courses of training, gained their Class "B" (Commercial) licences and now own aircraft. The Queensland, New South Wales, Victorian, and South Australian clubs have recently purchased a D.H.9 aircraft each, and are thus enabled to afford their members facilities for obtaining instruction and practice in flying the heavier type of machines.

Aviation pageants are held from time to time by the various sections of the Australian Aero Club and are increasing in popularity.

(ii) *Other Organizations.* Until the recent establishment of the Western Australian Aero Club, flying training in Perth was the responsibility of West Australian Airways Ltd., which provided the necessary aircraft, hangars, and instructional personnel, while the Government assisted by paying a bonus of £40 in respect of each pupil qualifying for his pilot's licence. Flying operations along similar lines are now carried out at Goulburn (N.S.W.) and Geelong (Victoria). Flying training is also carried out more or less intermittently by companies, clubs, or private owners at various provincial centres, the principal being :—Mt. Gambier (S.A.), Lismore, Ballina, and Wagga (N.S.W.), and Rockhampton (Q.).

6. Notable Flights.—Since the end of the European war several notable long distance flights have been carried out by Australian pilots. Short accounts of those prior to the year under review are contained in Year Book No. 22, but owing to limitations of space the details cannot be repeated in this issue. The most notable achievements since those recorded in Year Book No. 22 were briefly as follows :—

Wing-Commander C. E. Kingsford Smith and Mr. C. T. P. Ulm in the "Southern Cross" completed the journey from Australia to England by air in 12 days 14 hours.

On 12th August, 1928, the "Southern Cross" with the above-mentioned crew made a record non-stop flight from Melbourne to Perth in 23½ hours.

Wing-Commander Kingsford Smith again in the "Southern Cross," but on this occasion accompanied by an international crew, succeeded in crossing the Atlantic Ocean from Ireland to Newfoundland in June, 1930.

Messrs. Moir and Owen commenced a flight from England to Australia on 18th March, 1929, and, after considerable delays caused by accidents *en route*, arrived at Cape Don Lighthouse on the Northern Australian coast where a forced landing was made after dark on 18th May.

In May, 1930, Miss Amy Johnson, an English pilot, flew solo from England to Australia in a D.H. "Moth" in 19 days.

7. Statistical Summary.—The collection and compilation of aircraft statistics were undertaken by the Commonwealth Bureau of Census and Statistics on the 1st July, 1922. The subjoined table gives a summary of operations for the years ended 30th June, 1925 to 1929 :—

CIVIL AIRCRAFT.—AUSTRALIA.—SUMMARY, 1924-25 TO 1928-29.

Particulars.	Year ended 30th June—				
	1925.	1926.	1927.	1928.	1929.
Registered Aircraft Owners					
(a) .. No.	25	23	29	37	72
Registered Aircraft (a) No.	57	54	84	90	163
Licensed Pilots—(a)					
Private .. No.	34	41	48	127	209
Commercial .. No.			47	76	123
Licensed Ground Engineers					
(a) .. No.	110	116	148	163	198
Aerodromes—(a)					
Government .. No.	43	44	45	46	56
Public .. No.	11	11	11	13	19
Government Emergency					
Grounds .. No.	88	90	91	94	108
Flights carried out	No.				
	4,893	5,838	17,284	56,216	92,000
	h. m.	h. m.	h. m.	h. m.	h. m.
Hours flown ..	5,302 44	6,426 35	10,447 24	15,783 30	27,268 20
Approx. Mileage .. Miles	404,420	487,603	772,643	1,153,572	1,992,070
Passengers carried—					
Paying .. No.	3,663	4,174	13,984	36,397	56,363
Non-paying .. No.	2,428	2,830	3,222	5,629	10,037
Total .. No.	6,091	7,004	17,206	42,026	66,400
Goods, weight carried	lbs.				
Mails, letters carried	No.				
Accidents—					
Persons killed	No.	1	4	2	7
Persons injured	No.	3	3	5	10

(a) At 30th June.

In previous issues of the Year Book, particulars of flying carried out in the various States have been shown, but, owing to the extension of interstate flying both by the subsidized companies and private pilots, it has been found impracticable to obtain complete details for the several States separately for the year ended 30th June, 1929. The figures shown in the above table are therefore for the Commonwealth as a whole.

8. New Guinea Activities.—The discovery of gold in New Guinea resulted in considerable aviation activity in the vicinity of the goldfields, which, by ground route, are situated about 70 miles inland from Salamaua, on the north-east coast of the mainland of New Guinea. The value of aircraft as a means of transporting food and stores to the field and of bringing the gold to the seaboard is shown by the fact that, whereas aircraft cover the distance in approximately one hour, the nature of the intervening country is such that a journey by other means occupies more than a week. Several air transport companies are operating successfully without any direct assistance in the form of Government subsidies. The principal company (Guinea Airways Ltd.) is now completing arrangements to operate two specially constructed freight machines to carry 2,500 tons of hydro-electric power plant and dredging machinery to the fields during the year 1931. This work, if successfully accomplished, will constitute one of the most notable feats of transport in the history of aviation. The subjoined table gives a summary of operations for the years ended 30th June, 1928 and 1929.

**CIVIL AIRCRAFT.—TERRITORY OF NEW GUINEA.—SUMMARY 1927-28
AND 1928-29.**

Particulars.		Year ended 30th June—	
		1928.	1929.
Registered Aircraft Owners (a)	No.	5	7
Registered Aircraft (a)	No.	12	15
Licensed Pilots—(a)			
Private	No.	..	..
Commercial	No.	9	10
Licensed Ground Engineers (a)	No.	8	10
Aerodromes—(a)			
Government	No.	2	2
Emergency Landing Grounds	No.	4	4
Flights carried out	No.	821	1,532
		h. m.	h. m.
Hours flown		1,533 53	2,626 12
Approximate mileage	Miles	107,208	187,705
Passengers carried—			
Paying	No.	814	1,293
Non-paying	No.	94	65
Total	No.	908	1,358
Goods, weight carried	lbs.	518,831	1,385,510
Mails, weight carried	lbs.	6,171	13,876
Accidents—			
Persons killed	No.	..	..
Persons injured	No.	..	..

(a) At 30th June.

E. MOTOR VEHICLES.

1. The Motor Car and Motor Industry.—(i) *Evolution of the Motor Car.* In the issue of the Year Book for 1927 (No. 20, p. 319) a short history of the evolution of the motor car is given, but consideration of space precludes its repetition in the current issue.

(ii) *Motor Industry.* The demand for mechanical transport occasioned by the recent European conflict was in no small measure responsible for the extensive development of the internal combustion engine, and the keen competition among motor car manufacturers for the overseas markets has improved the quality and efficiency of their products.

Although, as yet, motor cars are not entirely manufactured in Australia, the money invested in assembling and body building plants has assumed considerable proportions during recent years, and some idea of the value of Australia as a market for the motor trade is instanced by the fact that during the year 1928-29 the value of 14,546 motor bodies imported was £1,471,878, and of the 99,500 chassis, £8,830,362. The value of 72,193 bodies built in Australia to equip the chassis for which bodies were not imported was approximately £4,357,841. The value of the tyre equipment, both locally produced and imported, for which figures are not, however, available, must also be taken into consideration, particularly as the prevailing practice is for distributors to retail cars on a five-tyre basis. Fuels imported during the year for use in motor vehicles were—Crude petroleum, 105 million gallons, valued at £858,678, and petroleum, etc., 200 million gallons, valued at £6,816,287. Spares, batteries, accessories, etc., also are additional factors contributing to the potentialities of Australia as a market.

At the 30th June, 1929, the number of motor cars per 1,000 of population was nearly 100, which, however, is not as high as that recorded in New Zealand, viz., 134, so that it would appear that the saturation point has yet to be reached.

2. Registration.—The arrangements for the registration of motor vehicles and the licensing of drivers and riders thereof are not uniform throughout Australia. Methods of registration, licence fees payable, etc., in each State were referred to in Official Year Book No. 16, pp. 337–340, and later issues, but limits of space preclude the repetition of this information in the present volume.

3. Public Vehicles.—In all the capital cities of the States and in many of the most important provincial centres taxi-cabs and other vehicles ply for hire under licence granted either by the Commissioner of Police or the Local Government authority concerned. As most of these vehicles are independently controlled by individuals or small companies, it has not been possible to obtain complete data in respect of their operations.

4. Motor Omnibuses.—Motor omnibus traffic, both in urban and provincial centres, has assumed considerable proportions during recent years, and prior to the constitution of Boards empowered to allocate routes over which omnibuses may operate, had a very marked effect on Railway and Tramway services. By regulating the licensing of motor omnibuses the economic waste arising from duplication of routes and services parallel with or contiguous to existing railway and tramway systems is avoided. The general principle governing the allocation of routes is that omnibus services should act as feeders to existing transport utilities. Revenue from licence fees is devoted principally to the maintenance or construction of roadways to enable them to withstand the wear and tear caused by the heavy traffic. Complete statistics regarding motor omnibus operations are, however, not at present available, but some indication of the effect unrestricted motor omnibus services would have on the railways and tramways may be obtained from the operations of some services conducted by railway and tramway systems as adjuncts to their main services during the year 1928–29. Such services are conducted in Victoria by the Victorian Railways Commissioners and by the Melbourne and Metropolitan Tramways Board, and in South Australia by the South Australian Railways Commissioners and by the Municipal Tramway Trust, Adelaide, the number of passengers carried by these services during the year 1928–29 being 450,799, 1,085,928, 55,569 and 9,518,815 respectively.

The services operated by the Melbourne and Metropolitan Tramways Board were necessary to provide transport facilities during the conversion of certain cable tram lines to electrical traction, but it is not the intention of the Board to institute omnibus services in a general way. In other instances the omnibus service has been provided to meet the competition of private enterprise and to endeavour to protect the existing transport utilities provided by public bodies.

5. Motor Vehicles Registered, etc.—(i) *Year 1928–29.* Particulars of the registration of motor vehicles, etc., for the year 1928–29 are contained in the subjoined table:—

MOTOR VEHICLES.—SUMMARY, 1928–29.

States and Territories.	Motor Vehicles Registered.					Drivers' and Riders' Licences Issued.	Revenue derived from—		
	Motor Cars	Motor Cycles.	Commercial Vehicles.	Total.	Per 1,000 of population.		Vehicle Registrations and Motor Tax.	Drivers' and Riders' Licences.	Total.
	No.	No.	No.	No.	No.		£	£	£
New South Wales	162,298	30,937	43,572	236,807	96·2	824,666	1,522,737	153,137	1,675,874
Victoria ..	143,407	24,554	2437	168,398	95·3	212,228	1,039,649	53,053	1,092,702
Queensland ..	73,356	8,281	22,452	84,089	90·7	56,960	447,273	20,792	468,065
South Australia	56,038	12,635	12,855	81,526	140·7	82,973	529,725	33,376	568,101
Western Australia	26,706	7,106	10,235	44,047	107·0	68,139	248,024	17,035	265,059
Tasmania ..	11,361	4,373	1,860	17,594	82·8	20,131	82,283	5,960	88,243
Central Australia	30	1	65	96	104·3	121	48	30	78
North Australia	136	41	162	339	127	127	104	29	133
Federal Capital Territory	1,027	121	215	1,363	163·5	1,983	7,391	888	8,779
Australia ..	474,359	88,049	271,851	634,259	99·5	767,328	3,877,734	289,300	4,167,034

(a) Motor buses. Trucks, vans, etc., included with motor cars
(c) Pneumatic tyred vehicles.

(d) Incomplete.

(b) Solid tyred vehicles.

(ii) *Quinquennium 1925-1929.* The following table shows the number of vehicles registered, licences issued, and revenue received therefrom during each of the years 1924-25 to 1928-29 :—

MOTOR VEHICLES.—REGISTRATIONS, ETC., AUSTRALIA, 1924-25 TO 1928-29.

Year.	Motor Vehicles Registered.					Drivers' and Riders' Licences Issued.	Revenue derived from—		
	Motor Cars.	Motor Cycles.	Commercial Vehicles. (a)	Total.	Per 1,000 of Population.		Vehicle Registration and Motor Tax.	Drivers' and Riders' Licences.	Total.
							£	£	£
1924-25	221,444	58,079	26,116	305,639	51.5	310,150	1,326,672	88,508	1,415,180
1925-26	282,199	70,209	37,892	390,300	64.6	496,311	2,098,112	137,639	2,235,751
1926-27	364,384	80,242	50,914	495,540	80.3	608,585	2,636,506	208,857	2,845,363
1927-28	419,131	84,017	62,006	565,154	89.9	681,237	3,364,861	249,964	3,614,825
1928-29	474,359	88,049	71,851	634,259	99.5	767,328	3,877,734	289,300	4,167,034

(a) Incomplete, partly included with Motor Cars.

During the period dealt with, the number of motor vehicles showed an average annual increase of 20 %; the greatest increase (28%) being recorded during 1925-26 and the least (12 %) during 1928-29. The number of vehicles per 1,000 of population increased from 51.5 to 99.5.

6. *Comparative Motor Vehicle Statistics, 1930.*—The result of the 1930 World Motor Census, conducted by the "American Automobile" magazine, from which the following particulars have been extracted, shows that there were nearly 35,000,000 motor cars, trucks, and buses registered in various countries of the world at 1st January, 1930.

COMPARATIVE MOTOR VEHICLE STATISTICS, 1st JANUARY, 1930.

Country.	Motor Cars, Trucks, and Buses.	Motor Cycles.
Australia	570,000	100,000
Argentina	358,625	2,766
Belgium	140,328	43,500
Brazil ..	188,349	1,630
Canada	1,169,445	8,924
Cuba ..	48,544	472
Denmark	103,249	20,625
France..	1,265,841	321,914
Germany	609,030	665,145
Great Britain	1,370,711	690,000
India ..	164,275	26,797
Irish Free State	37,404	7,591
Italy ..	230,509	78,772
Japanese Empire	90,465	26,600
Mexico	80,653	700
Netherlands	98,428	32,500
Netherlands East Indies	70,883	1,100
New Zealand	173,815	37,355
Union of South Africa	141,674	36,500
Spain ..	178,176	37,500
Sweden	144,519	60,000
Switzerland	70,650	44,750
United States of America	26,564,659	115,226

The foregoing figures are in some cases approximately stated, being based on estimates furnished by Trade Commissioners or representative motor trade organizations in the several countries. The figures for Australia are estimated at 31st December, 1929, and differ from those stated in para. 5, which are actual registrations at 30th June, 1929.

In respect of motor cars Australia now ranks sixth in importance numerically among the countries of the world, having been displaced by Germany from fifth position during 1928.

F. POSTS, TELEGRAPHS AND TELEPHONES.

§ 1. Posts.

1. **The Commonwealth Postal Department.**—In previous issues of the Year Book some account was given of the procedure in connexion with the transfer to the Federal Government of the postal, telegraphic, and telephonic facilities of the separate States. (See Year Book No. 15, p. 601.)

Under the provisions of the Commonwealth Post and Telegraph Act, 1901, the Commonwealth Postal Department was placed under the control of a Postmaster-General, being a responsible Minister with Cabinet rank, and a Secretary having chief control of the Department under the Postmaster-General, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General.

2. **Postal Matter Dealt With.**—In previous issues of this work, details of the postal matter dealt with by the Postmaster-General's Department were shown, but, owing to the non-completion of an investigation which is being made into the system of recording such particulars, details for the years 1927–28 and 1928–29 are not available. The usual tables have, therefore, been omitted from this issue.

3. **Postal Facilities.**—(i) *Relation to Area and Population.* The subjoined statement shows the number of post offices, the area in square miles and the number of inhabitants to each post office (including non-official offices) in each State and in Australia at the end of the year 1928–29. In order to judge clearly the relative postal facilities provided in each State, the area of country to each office, as well as the number of inhabitants per office, should be taken into account. The returns given for South Australia in this and all succeeding tables include those for the Northern Territory, while the returns for the Federal Capital Territory are included in those for New South Wales.

**POSTAL FACILITIES.—RELATION TO AREA AND POPULATION,
at 30th JUNE, 1929.**

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia.
Number of post offices(a) ..	2,698	2,738	1,281	808	675	517	8,717
Number of square miles of territory to each office in State ..	115	32	523	1,118	1,446	51	341
Number of inhabitants to each office	916	646	724	722	610	411	731
Number of inhabitants per 100 square miles ..	796	2,011	138	65	42	811	214

(a) Includes "Official," "Semi-Official," and "Non-Official" Offices.

The foregoing table does not include "telephone" offices at which telegraph and telephone business only is transacted.

(ii) *Number of Offices.* The following table shows the number of post offices in each year from 1924-25 to 1928-29 inclusive :—

POST OFFICES AT 30th JUNE, 1925 TO 1929.

At 30th June—

State.	1925.		1926.		1927.		1928.		1929.	
	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)
New South Wales	459	2,205	458	2,221	456	2,226	455	2,228	448	2,250
Victoria..	280	2,428	285	2,429	284	2,445	286	2,462	283	2,455
Queensland ..	215	1,072	216	1,068	216	1,069	215	1,064	211	1,070
South Australia ..	147	660	148	660	150	657	146	657	148	660
Western Australia	138	582	139	593	132	583	130	559	128	547
Tasmania ..	48	466	48	475	48	473	47	471	44	473
Australia ..	1,287	7,413	1,294	7,446	1,286	7,453	1,279	7,441	1,262	7,455

(a) Includes offices previously designated as " Allowance " and " Receiving " Offices.

(iii) *Employees and Mail Contractors.*—The number of employees and mail contractors in the Central Office and in each of the States is given in the appended table :—

POSTAL EMPLOYEES AND MAIL CONTRACTORS, 1925 TO 1929.

At 30th June—

State.	1925.		1926.		1927.		1928.		1929.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
Central Office ..	110	..	180	..	149	..	170	..	195	..
New South Wales	14,413	1,915	14,244	1,924	14,214	1,933	13,856	1,947	15,267	1,952
Victoria..	11,140	1,139	11,226	1,156	11,607	1,145	10,950	1,142	11,067	1,180
Queensland ..	6,322	839	6,181	850	5,953	860	5,504	870	5,437	786
South Australia ..	3,926	430	4,275	424	4,388	402	4,144	413	4,117	421
Western Australia	3,271	319	2,986	379	3,061	357	2,883	358	2,929	365
Tasmania ..	1,551	243	1,615	247	1,555	247	1,509	236	1,533	276
Australia ..	40,733	4,885	40,657	4,980	40,927	4,944	39,016	4,966	40,545	4,980

4. Registered Letters, Packets, etc.—Particulars regarding registered articles for the year 1928–29 are given in the table hereunder :—

REGISTERED ARTICLES POSTED AND RECEIVED, 1928–29.

State.	Posted in each State for Delivery within Australia.		Posted in each State for Delivery Overseas.		Total Posted.		Received in each State for Delivery Overseas.	
	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.
New South Wales ..	2,848	1,161	210	85	3,058	1,246	252	103
Victoria ..	2,084	1,184	120	68	2,204	1,252	163	92
Queensland ..	1,022	1,115	52	56	1,074	1,171	50	54
South Australia ..	593	1,017	36	62	629	1,079	34	58
Western Australia..	536	1,320	57	142	593	1,462	48	118
Tasmania ..	293	1,352	5	24	298	1,398	10	47
Australia ..	7,376	1,164	480	76	7,856	1,240	557	88

5. Value-Payable Parcel and Letter Post.—(i) *General.* The Postal Department undertakes to deliver registered articles sent by parcel post within Australia, or between Papua or Nauru and Australia, to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment.

(ii) *Summary of Business.* The next statement gives particulars regarding the value-payable post in each State for the years 1925 to 1929 :—

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
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NUMBER OF PARCELS POSTED.

	No.	No.	No.	No.	No.	No.	No.
1925	209,265	8,397	199,752	3,559	69,065	387	490,425
1926	236,900	11,508	204,819	5,033	69,970	316	528,546
1927	252,300	11,801	216,418	8,132	71,473	446	560,570
1928	296,391	20,005	236,040	11,789	79,761	505	644,491
1929	313,654	24,426	248,210	14,564	79,699	430	680,983

VALUE COLLECTED.

	£	£	£	£	£	£	£
1925	347,902	15,440	331,280	5,728	108,193	1,055	809,598
1926	397,283	22,035	328,954	6,327	109,671	811	865,081
1927	402,186	21,617	334,619	10,939	112,276	1,075	882,712
1928	462,794	35,699	350,712	17,095	114,035	1,040	981,375
1929	462,964	41,878	364,156	19,964	116,052	859	1,005,873

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1925 TO 1929—*continued*.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
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REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY ORDER COMMISSION.

	£	£	£	£	£	£	£
1925	31,324	1,138	25,908	469	8,951	53	67,843
1926	32,232	1,564	26,539	634	8,872	44	69,885
1927	32,450	1,569	28,108	864	8,720	58	71,769
1928	36,318	2,547	30,700	1,264	8,939	62	79,830
1929	38,968	3,116	33,048	1,669	8,914	53	85,768

The number and value of parcels forwarded in New South Wales and Queensland are greatly in excess of the transactions of any of the other States, although the system has also found favour for several years in Western Australia. These three States have the largest areas, and consequently more people at long distances from business centres who avail themselves of the value-payable system. Although South Australia, too, has a large area the population of that State is, comparatively, not widely spread. The amount of business transacted in Victoria, South Australia, and Tasmania is comparatively light, but generally increased business has been done in recent years.

6. *Sea-borne Mail Services.*—(i) *General.* In earlier issues of this work particulars of sea-borne mail services were included, but owing to the restrictions of space this information cannot be given in the present issue.

(ii) *Amount of Mail Subsidies Paid.* The following table shows the amounts of subsidies paid by the Commonwealth Postal Department for ocean and coastal mail services during the year ended 30th June, 1929 :—

MAIL SUBSIDIES.—OCEAN AND COASTAL SERVICES, 1928–29.

Service.	Orient S.N. Co.	Queens- land Ports.	South Australian Ports.	Western Australian Ports.	Tas- manian Ports.
	£	£	£	£	£
Annual subsidy	130,000	2,200	4,500	5,864	29,125

During the year 1928–29 the amount paid for conveyance of mails at poundage rates by non-contract vessels was £36,038; by road services, £700,687; and by railways services, £536,766. The total expenditure during the financial year 1928–29 on the carriage of mails, as disclosed by the Profit and Loss Account, amounted to £1,428,165.

7. *Transactions of the Dead Letter Offices.*—The table hereunder shows the number of letters, postcards and letter-cards, and packets and circulars, including Inland, Interstate, and International, dealt with by the Dead Letter Offices in 1928–29, and the methods adopted in the disposal thereof :—

DEAD LETTER OFFICES.—SUMMARY, 1928-29.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
LETTERS, POSTCARDS, AND LETTER-CARDS.							
Returned direct to writers or delivered	1,049,346	365,605	217,256	112,976	137,114	92,304	1,974,601
Destroyed in accordance with Act..	125,910	67,051	32,211	9,169	9,222	4,146	247,709
Returned to other States or Countries as unclaimed	70,207	30,111	21,276	9,095	17,910	1,368	149,967
Total	1,245,463	462,767	270,743	131,240	164,246	97,818	2,372,277

PACKETS AND CIRCULARS.

Returned direct to writers or delivered	918,555	169,303	165,795	71,895	92,567	21,540	1,439,655
Destroyed in accordance with Act..	190,149	136,228	73,996	72,360	1,824	216	474,773
Returned to other States or Countries as unclaimed	2,122	23,687	8,699	3,262	696	3,930	42,396
Total	1,110,826	329,218	248,490	147,517	95,087	25,686	1,956,824
Grand Total (letters, packets, etc.)	2,356,289	791,985	519,233	278,757	259,333	123,504	4,329,101

During the year 1928-29 money and valuables to the amount of £180,618 were found in undeliverable postal articles, while 39,434 postal articles were posted without address, including 347 which contained money and valuables to the extent of £2,350.

8. Money Orders and Postal Notes.—(i) *General.* The issue of money orders and postal notes is regulated by sections 74 to 79 of the Post and Telegraph Act, 1901. A money order may be issued for payment of sums up to £20 within Australia, and not exceeding £40 (in some cases £20, and in Mauritius £10) in places abroad. A postal note which is payable only within Australia and in Papua, cannot be issued for a larger sum than twenty shillings.

(ii) *Summary for States, 1928-29.* Particulars regarding the business transacted in each State for the year 1928-29 are given hereunder :—

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, 1928-29.

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ..	7,925,269	7,725,520	53,334	2,532,686	56,262
Victoria ..	3,370,888	3,514,736	23,387	1,720,553	38,779
Queensland..	2,693,272	2,458,191	17,723	627,405	14,468
South Australia ..	1,082,002	1,030,197	7,915	389,580	9,026
Western Australia ..	1,464,496	1,272,833	9,919	319,987	6,892
Tasmania ..	558,387	501,847	3,762	151,057	3,433
Australia	17,094,314	16,503,324	116,040	5,741,268	128,860

The figures in the foregoing table show a substantial increase over the corresponding particulars for the previous year.

(iii) *Summary, Australia, 1925 to 1929.* The next table shows the total number and value of money orders and postal notes issued and paid in Australia from 1924-25 to 1928-29 :—

**MONEY ORDERS AND POSTAL NOTES.—SUMMARY, AUSTRALIA,
1924-25 TO 1928-29.**

Year ended 30th June—	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1925 ..	2,976	15,155	2,835	14,728	13,437	4,634	13,370	4,616
1926 ..	3,081	15,845	2,911	15,366	14,237	4,946	14,044	4,862
1927 ..	3,225	16,500	3,043	15,925	14,502	5,300	14,360	5,270
1928 ..	3,349	17,011	3,188	16,411	15,402	5,579	15,357	5,568
1929 ..	3,416	17,094	3,233	16,503	15,626	5,741	15,591	5,737

(iv) *Classification of Money Orders Issued and Paid.* (a) *Orders Issued.* The next table shows the number and value of money orders issued in each State during the year 1928-29, classified according to the country where payable :—

MONEY ORDERS ISSUED.—COUNTRY WHERE PAYABLE, 1928-29.

State in which Issued.	Where Payable.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
NUMBER.					
New South Wales ..	1,448,340	15,794	105,564	26,190	1,595,888
Victoria ..	578,959	6,966	60,458	19,348	665,731
Queensland..	480,068	2,164	28,039	12,570	522,841
South Australia ..	202,239	1,229	18,693	8,146	230,307
Western Australia ..	241,180	1,251	26,577	7,285	276,293
Tasmania ..	116,496	1,286	5,730	1,651	125,163
Australia ..	3,067,282	28,690	245,061	75,190	3,416,223

VALUE.

	£	£	£	£	£
New South Wales ..	7,432,910	65,151	305,855	121,353	7,925,269
Victoria ..	3,083,912	24,018	176,250	86,708	3,370,888
Queensland..	2,545,480	7,749	85,627	54,416	2,693,272
South Australia ..	992,188	3,830	50,526	35,458	1,082,002
Western Australia ..	1,348,824	5,253	73,772	36,647	1,464,496
Tasmania ..	537,433	5,335	12,315	3,304	558,387
Australia ..	15,940,747	111,336	704,345	337,886	17,094,314

(b) *Orders Paid.* The number and value of money orders paid in each State during the year 1928-29, classified according to the country where issued, are given hereunder :—

MONEY ORDERS PAID.—COUNTRY OF ISSUE, 1928-29.

State in which Paid.	Where Issued.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
NUMBER.					
New South Wales ..	1,443,404	43,581	21,004	14,907	1,522,896
Victoria ..	643,366	18,328	13,339	5,697	680,730
Queensland..	459,519	2,847	6,066	4,510	472,942
South Australia ..	200,168	1,293	3,774	1,417	206,652
Western Australia ..	230,210	1,661	6,173	1,804	239,848
Tasmania ..	103,067	3,317	1,344	2,097	109,825
Australia ..	3,079,734	71,027	51,700	30,432	3,232,893
VALUE.					
New South Wales ..	£ 7,430,628	£ 147,252	£ 94,607	£ 53,033	£ 7,725,520
Victoria ..	3,379,516	56,130	57,440	21,650	3,514,736
Queensland..	2,410,092	9,929	24,914	13,256	2,458,191
South Australia ..	1,004,028	5,365	15,786	5,018	1,030,197
Western Australia ..	1,232,100	5,319	28,265	7,149	1,272,833
Tasmania ..	485,639	8,146	3,910	4,152	501,847
Australia ..	15,942,003	232,141	224,922	104,258	16,503,324

In the tables above, money orders payable or issued in foreign countries which have been sent from or to Australia through the General Post Office at London are included in those payable or issued in Great Britain and Ireland.

(v) *Classification of Postal Notes Paid.* The subjoined table shows the number and value of postal notes paid during the year 1928-29, classified according to the State in which they were issued.

Particulars regarding the total number and value of postal notes issued and paid in each of the last five years have been given previously.

POSTAL NOTES PAID.—STATE OF ISSUE, 1928-29.

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
NUMBER.							
Issued in same State	4,492,827	3,106,130	1,380,591	700,100	713,785	327,749	10,721,182
Issued in other States	610,621	441,366	1,361,004	93,820	29,821	2,333,455	4,870,037
Total ..	5,103,448	3,547,496	2,741,595	793,920	743,606	2,661,204	15,591,269
VALUE.							
Issued in same State	£ 1,804,395	£ 1,169,662	£ 516,660	£ 242,011	£ 269,692	£ 111,871	£ 4,114,291
Issued in other States	212,860	166,406	397,937	31,822	11,822	801,723	1,622,570
Total ..	2,017,255	1,336,068	914,597	273,833	281,514	913,594	5,736,861

The number and value of postal notes paid in Australia during the year showed an increase of 1.5 and 3 per cent. respectively over the corresponding figures for the year 1927-28.

9. Profit or Loss, Postmaster-General's Department.—(i) *Revenue (a) Analysis, States, 1928–29.* The following table shows the gross revenue classified according to branches in each State for the year 1928–29. The figures are supplied by the Treasury, and represent the actual collections for the year.

GROSS REVENUE, POSTMASTER-GENERAL'S DEPT., ANALYSIS, 1928–29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postage	2,118,107	1,441,804	728,456	408,418	327,505	152,887	5,177,177
Money order commission	109,616	61,422	32,593	16,906	17,080	7,359	244,976
Poundage on postal notes							
Private boxes and bags							
Miscellaneous	26,947	16,092	16,047	10,806	6,277	2,932	79,101
	125,952	137,008	50,641	25,593	36,813	7,143	383,150
Total Postal ..	2,380,622	1,656,326	827,737	461,723	387,675	170,321	5,884,404
Telegraphs (ordinary)	525,208	324,901	235,065	180,181	135,892	46,009	1,447,256
Telegraphs (radio) ..	7,084	9,267	1,977	1,836	1,468	545	22,177
Total Telegraphs	532,292	334,168	237,042	182,017	137,360	46,554	1,469,433
Telephones	2,106,433	1,529,634	762,998	599,035	320,603	140,856	5,459,559
Grand Total ..	5,019,347	3,520,128	1,827,777	1,242,775	845,638	357,731	12,813,396

Increased telephone revenue (£425,508) largely contributed to the total increase of £509,254 over the revenue for 1927–28.

(b) *Branches, 1925 to 1929.* The gross revenue collected in respect of each branch of the Department during each of the past five years is shown in the table hereunder:—

GROSS REVENUE, POSTMASTER-GENERAL'S DEPT., 1925 TO 1929.

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1925	4,944,546	(d)1,500,076	3,599,864	10,044,486
1926	5,215,684	(e)1,511,658	4,044,414	10,771,756
1927	5,505,985	(a)1,523,971	4,576,863	11,606,819
1928	5,802,882	(b)1,467,209	5,034,051	12,304,142
1929	5,884,404	(c)1,469,433	5,459,559	12,813,396

Includes radio receipts (a) £35,815, (b) £45,030, (c) £22,177 (d) £18,292, and (e) £21,178.

As compared with the corresponding figures for the previous year, an increase of 4.14 per cent. is shown, the increases in the several branches being as follows:—Postal 1.41 per cent., Telegraph 0.15 per cent., and Telephone 8.45 per cent.

(ii) *Working Expenses (a) Analysis, States, 1928–29.* Particulars of the working expenses of each branch of the Department by States during 1928–29 are shown in the following table. As in the case of gross revenue, the figures have been furnished by the Treasury and represent actual payments during the financial year.

WORKING EXPENSES, POSTMASTER-GENERAL'S DEPARTMENT, 1928-29.

Branch.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postal ..	2,112,811	1,383,124	699,495	406,673	358,403	197,286	5,157,792
Telegraph ..	607,782	331,461	272,274	172,221	160,917	60,202	1,604,857
Telephone ..	1,668,407	1,218,232	567,737	561,992	252,047	159,353	4,427,818
All Branches	4,389,000	2,932,817	1,539,556	1,140,886	771,367	416,841	11,190,467

The working expenses of the Postal Branch represented 46 per cent. of the total, Telegraph Branch, 14 per cent., and the Telephone Branch, 40 per cent.

(b) *Branches, 1925 to 1929.* The appended table shows the working expenses of each branch for the period 1924-25 to 1928-29.

WORKING EXPENSES, POSTMASTER-GENERAL'S DEPARTMENT, 1925 TO 1929.

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1925	4,488,021	1,613,695	3,128,914	9,230,630
1926	4,637,126	1,704,705	3,487,234	9,829,065
1927	4,868,929	1,678,372	3,864,207	10,411,508
1928	5,083,247	1,706,870	4,238,515	11,028,632
1929	5,157,792	1,604,857	4,427,818	11,190,467

The working expenses for the Department as a whole have increased by £1,959,837 (21 per cent.) during the four years.

(iii) *Interest Charges.*—(a) *States and Branches, 1928-29.* The interest payable on capital expenditure for the three Branches in each State during 1928-29 was as follows :—

INTEREST CHARGES, POSTMASTER-GENERAL'S DEPARTMENT, 1928-29.

Branch.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postal ..	58,887	38,941	15,181	12,981	13,443	3,427	142,860
Telegraph ..	55,784	27,452	31,421	21,524	20,606	2,811	159,598
Telephone ..	492,368	378,904	215,094	174,424	86,253	37,343	1,384,386
All branches	607,039	445,297	261,696	208,929	120,302	43,581	1,686,844

Owing to the great expansion of the telephone service during recent years, and the more expensive nature of equipment generally, the interest charges allocated to the Telephone Branch represented over 80 per cent. of the total.

(b) *Branches, 1925 to 1929.* For the five years, 1925 to 1929, each Branch was debited with the following amounts in respect of interest on capital expenditure :—

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	All Branches.
	£	£	£	£
1925	122,442	173,283	790,816	1,086,546
1926	129,084	187,714	942,391	1,259,189
1927	136,583	162,468	1,111,777	1,410,818
1928	137,041	157,999	1,232,073	1,527,113
1929	142,860	159,598	1,384,386	1,686,844

(iv) *Profit or Loss.*—(a) *States, 1928–29.* The operations of each branch of the Department in the several States after providing for working expenses, depreciation, and Interest Charges during the year 1928–29, showed the following results :—

PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT, 1928–29.

Branch.	Profit or Loss.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
		£	£	£	£	£	£	£
Postal ..	{ Profit Loss ..	225,466 ..	177,920 ..	111,967 ..	39,369 ..	5,656 ..	28,508 ..	531,870 ..
Telegraph ..	{ Profit Loss ..	110,390 ..	19,178 ..	48,532 ..	12,118 ..	27,511 ..	10,405 ..	228,134 ..
Telephone ..	{ Profit Loss ..	22,406 ..	29,895 ..	3,776 ..	130,087 ..	7,733 ..	53,315 ..	247,212 ..
All Branches	{ Profit Loss ..	92,670 ..	128,847 ..	59,659 ..	102,836 ..	29,588 ..	92,228 ..	56,524 ..

After providing for depreciation, pensions and retiring allowances and interest on capital, the year 1928–29 closed with a profit of £56,524, which represents an increase of £287,187 on the result for the year 1927–28, when a deficit of £230,663 was shown.

(b) *Branches, 1925 to 1929.* The following statement gives particulars of the operating results of each branch for the period 1925 to 1929 :—

PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT, 1925–29.

Year Ended 30th June—	Branch.							
	Postal.		Telegraph.		Telephone.		All Branches.	
	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.
	£	£	£	£	£	£	£	£
1925 ..	243,472	..	..	227,175	..	258,619	..	242,322
1926 ..	319,979	..	..	308,632	..	296,684	..	285,337
1927 ..	445,929	..	..	278,720	..	339,270	..	172,061
1928 ..	403,850	..	..	312,075	..	322,438	..	230,663
1929 ..	531,870	..	..	228,134	..	247,212	56,524	..

10. *Expenditure, Postmaster-General's Department.*—(i) *Distribution.* The following table shows, as far as possible, the distribution of expenditure on various items in each State during the year ended 30th June, 1929. The table must not be regarded as a statement of the working expenses of the Department, since items relating to new works, interest, etc., are included therein.

EXPENDITURE, POSTMASTER-GENERAL'S DEPT.—DISTRIBUTION, 1928–29.

Particulars.	Central Office.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£	£
Salaries and contingencies—								
Salaries ..	72,272	2,351,666	1,664,562	822,957	644,808	445,199	199,060	6,200,524
Conveyance of mails ..	..	590,987	282,820	251,697	101,757	109,075	43,661	1,319,997
Contingencies ..	8,168	904,815	576,171	261,794	262,795	148,967	98,340	2,261,050
Ocean mails ..	130,000	..	..	..	..	..	..	130,000
Miscellaneous ..	4,188	33,971	24,129	8,108	7,987	4,320	4,861	87,564
Pensions and retiring allowances ..	..	41,679	51,376	..	..	17,550	..	110,605
Rent, repairs, maintenance ..	725	53,420	32,690	17,442	11,089	8,528	3,961	127,855
Supervision of works ..	..	..	..	..	..	..	399	399
Proportion of Audit Office expenses ..	..	4,488	3,222	1,677	1,067	743	390	11,593
New works—								
Telegraph and telephone ..	1,558	1,118,579	697,526	359,779	317,772	148,573	139,686	2,783,473
New buildings, etc. ..	..	133,612	23,421	29,718	14,751	10,674	17,568	229,744
Interest on transferred properties ..	..	114,328	61,362	45,575	37,523	21,869	9,924	290,581
Other ..	2,139,685	..	..	..	..	..	..	2,139,685
Total ..	2,356,596	5,287,545	3,417,279	1,798,747	1,399,549	915,498	517,856	15,693,070

(a) Particulars of apportionment to each State not available.

The decrease of £574,523 in the expenditure on new telegraph and telephone works was the principal factor governing the decrease of £405,707 in the total expenditure, as compared with the year 1927–28.

(ii) *Total, 1925 to 1929.* The next table gives the actual payments made as shown by records kept for Treasury purposes in respect of the Postal Department for each of the years ended 30th June, 1925 to 1929 inclusive.

EXPENDITURE, POSTMASTER-GENERAL'S DEPT., 1925 TO 1929.

Expenditure.	Year ended 30th June—				
	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£
Total	14,887,929	16,270,117	15,281,686	16,098,777	15,693,070

The total expenditure for 1928–29 increased by 5 per cent. on the amount for 1924–25.

11. *Capital Account.*—The appended statement shows particulars of the fixed assets of the Postmaster-General's Department at 30th June, 1929.

DETAILS OF FIXED ASSETS, 30th JUNE, 1929.

Particulars.	Net Value, 1st July, 1928. (b)	Capital Expenditure, 1928–29.	Gross Value, 30th June, 1929.	Less Deprecia- tion, &c. 1928–29. (a)	Net Value, 30th June, 1929.
	£	£	£	£	£
Telephone Lines and equipment	27,147,745	2,830,018	29,977,763	793,473	29,184,290
Telegraph Lines and Trunk Line equipment	9,177,520	593,916	9,771,436	119,234	9,652,202
Telegraph equipment	467,392	57,275	524,667	26,734	497,933
Postal equipment	225,541	65,510	291,051	4,614	286,437
Sites, Buildings, Furniture, and Office equipment	8,845,970	253,900	9,099,870	76,430	9,023,440
Miscellaneous	586,847	77,549	664,396	39,779	624,617
Total	46,451,015	3,878,168	50,329,183	1,060,264	49,268,919

(a) Includes Dismantled Assets, Depreciation written off, and Assets transferred.

(b) The variations between the figures shown in this column and those shown on page 332 of *Year-Book No. 22* are due to a re-arrangement of the Asset Accounts from 1st July, 1928. The total is not affected.

During the past quinquennium the value of the fixed assets has nearly doubled, the net value at 30th June, 1924, being £28,776,726.

§ 2. Telegraphs.

1. *General.*—A review of the development of the Telegraph Services in Australia was given in a previous issue of this work (see *Year Book No. 15*), but limitations of space preclude the repetition of this information in the present issue. During the past year substantial improvements in both the speed and grade of telegraph service throughout the Commonwealth have been effected, the entire system being subjected to intensive re-organization.

(i) *Improvements Effected.* Particular attention has been paid to the introduction of up-to-date methods of handling business, the extension of "carrier wave" services whereby several messages may be transmitted simultaneously over the one line, the more profitable use of existing circuits, the adoption of better methods of circulating and routing traffic, and the recruitment and training of officers with the object of ensuring a continuous supply of skilled staff.

In order to speed up transmission, the manual system between the capital cities and between important country centres has been systematically substituted by fast speed machine operation. Thus, between Melbourne and Sydney, Melbourne and Adelaide, Sydney and Brisbane, Sydney and Adelaide, Brisbane and Rockhampton, and Brisbane and Townsville, Murray multiplex machine service is in operation, providing telegraph outlets which permit the carriage of very heavy interstate and intra-state loads with a minimum delay. Between Brisbane and Toowoomba, Brisbane and Charleville, Melbourne and Bendigo, Melbourne and Mildura, Perth and Kalgoorlie, Perth and Fremantle, Sydney and Bathurst, and Sydney and West Maitland, a modified form of the multiplex system known as the teletype has been established, providing a substantially improved service.

(ii) *Interstate Traffic.* The service and economic advantages offered by the "carrier wave" system have been recognized by the establishment of carrier transmission between Melbourne and Sydney, and Melbourne and Adelaide. As indicating the economic advantages of this system, one existing pair of wires between Melbourne and Sydney has been utilized to provide a present number of 22 telegraph channels in addition to the telephone trunk line service. The telegraph channels thus provided are adequate to meet all present requirements, but the number can be readily extended without erecting additional wires between Melbourne and Sydney in harmony with the increment in telegraph load for a number of years. The advantages are such that the establishment of telegraph carrier transmission between Perth and Adelaide and between Sydney and Brisbane is to be undertaken. High speed automatic machine printing systems will be employed for the purpose of discharging heavy traffic loads over these carrier channels.

(iii) *Grade of Service.* As a result of the action instituted, a marked improvement in plant and labour outputs has already been achieved. The improved stability of telegraph line plant and equipment, as well as the accommodation provided for the personnel has enabled an average grade of service of 15 minutes to be achieved on the principal telegraph routes of the Commonwealth.

(iv) *Phonogram Service.* So as to provide greater convenience and use to the public, the phonogram service has been extended, and telephone subscribers may now telephone telegrams for onward transmission, or have messages telephoned to them, without trouble. The fee for the service is small, and the innovation means, in effect, that the telegraph system is brought into the home of every telephone subscriber.

(v) *Radiograms within the Commonwealth.* On 1st May, 1929 the rates for radiograms between Flinders Island, King Island, Maria Island, Wave Hill, Brunette Downs and other places within the Commonwealth were reduced to 1½d. per word with a minimum charge of two shillings.

2. *Telegraph Offices, Length of Lines and Wire.*—(i) *Summary for Australia.* The following table shows the number of telegraph offices and the length of telegraph lines and of telegraph wire available for use in Australia in each year from 1925 to 1929 :—

TELEGRAPHS.—AUSTRALIA, SUMMARY, 30th JUNE, 1925 TO 1929.

Particulars.	1925.	1926.	1927.	1928.	1929.
Number of offices	8,576	8,904	9,111	9,136	9,252
Length of wire (miles)—					
Telegraph purposes only	66,702	65,471	70,563	73,303	72,642
Telegraph and telephone purposes ..	126,086	149,989	158,470	87,376	87,303
Length of line (miles)—					
Conductors in Morse cable	2,399	3,123	3,280	3,441	3,500
Conductors in submarine cable	2,919	3,598	4,251	4,505	4,676
Pole routes (miles)	80,399	85,647	93,237	97,110	96,467

(ii) *Particulars for each State.* The following table gives corresponding particulars for each State for the year 1928-29 :—

TELEGRAPHS.—STATES, SUMMARY, 30th JUNE, 1929.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of offices ..	3,069	2,409	1,452	790	976	556	9,252
Length of wire (miles)—							
Telegraph purposes only	21,120	8,489	19,046	9,690	13,479	818	72,642
Telegraph and telephone purposes ..	33,231	14,404	23,777	12,033	2,253	1,605	87,303
Length of line (miles)—							
Conductors in Morse cable	1,510	1,381	454	..	141	14	3,500
Conductors in submarine cable (statute miles) ..	3,226	468	348	224	..	410	4,676
Pole routes (miles) ..	31,946	18,833	15,621	14,965	11,691	3,411	96,467

A total length of 159,945 miles of wire is available for telegraph purposes, of which 87,303 miles are also used for telephone purposes, and the figures show decreases of 734 (0.5 per cent.) and of 73 miles (0.1 per cent.) respectively over the corresponding mileages for the previous year. The decreases in the mileage figures are due to the extension of the practice of exploiting the physical wires by superimposing telegraph facilities over telephone wires.

3. *Number of Telegrams Dispatched.*—(i) *Total for Australia.* The number of telegrams dispatched to destinations within Australia in each of the last five years is given hereunder :—

TELEGRAMS DISPATCHED.—AUSTRALIA, 1925 TO 1929.

Telegrams.	Year ended 30th June—				
	1925.	1926.	1927.	1928.	1929.
Number (a) ..	17,132,145	17,637,716	17,274,289	16,608,226	16,345,152

(a) Including interstate cablegrams.

(ii) *Totals for each State.* The appended table shows the total number of telegrams dispatched in each State in 1928-29 according to the class of message transmitted :—

TELEGRAMS DISPATCHED.—STATES, 1928-29.

Class of Message Transmitted within the Commonwealth.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
Paid and Collect—							
Ordinary ..	4,574,840	3,166,963	2,264,759	1,066,147	1,480,334	323,811	12,876,854
Urgent ..	656,302	208,183	162,816	68,406	83,803	15,405	1,194,915
Press ..	270,222	161,212	113,895	57,699	42,779	54,014	699,821
Lettergram ..	91,593	76,616	86,742	42,306	67,152	31,648	396,057
Radiogram ..	22,181	7,661	5,581	4,210	4,048	9,619	53,300
Total ..	5,615,138	3,620,635	2,633,793	1,238,768	1,678,116	434,497	15,220,947
Unpaid—							
Service ..	109,216	53,974	43,476	50,104	56,066	21,261	334,097
Shipping ..	72,298	122,719	20,482	6,418	15,371	6,916	244,204
Meteorological ..	175,954	76,845	75,291	80,578	109,882	27,354	545,904
Total ..	357,468	253,538	139,249	137,100	181,319	55,531	1,124,205
Grand Total ..	5,972,606	3,874,173	2,773,042	1,375,868	1,859,435	490,028	16,345,152

The figures in the foregoing table show a decrease in the total volume of telegraph business of 263,074 messages as compared with the previous year.

4. **Letter-telegrams.**—Letter-telegrams are accepted at any hour at telegraph offices, which are open for business after 7 p.m., subject to the condition that delivery is effected by posting at the letter-telegram office of destination.

5. **Revenue and Expenditure.**—Particulars of the revenue and expenditure of the telegraph systems for the years 1924–25 to 1928–29 are given in earlier pages.

§ 3. Submarine Cables.

1. **First Cable Communication with the Old World.**—In earlier issues of the Year Book will be found a detailed account of the connexion of Australia with the old world by means of submarine cables. (See No. 6, p. 770.)

2. **General Cable Services.**—Descriptions of the various cable services between Australia and other countries are given in Year Book No. 22, p.p. 335 and 336, but considerations of space preclude the repetition of this information in the present issue.

3. **Merging of Cable and Wireless Interests.**—Following upon the recommendations of the Imperial Wireless and Cable Conference in London in 1928 to examine the situation which had arisen as the result of the competition of the Beam Wireless with the Cable services, the Imperial and International Communications Limited was formed and took over the operations of the Pacific Cable Board and the control of the Eastern Extension Cable Company and the Marconi Wireless Company. As yet the merger is not fully effective in Australia although the offices of the Eastern Extension Company and the Pacific Cable Board in Sydney and Melbourne were combined during December, 1929.

4. **Cable Business.**—(i) *Australia.* The subjoined table shows the number of cablegrams received and dispatched in Australia from 1926–27 to 1928–29 :—

CABLEGRAMS.—AUSTRALIA, 1926–27 TO 1928–29.

Cablegrams.	Cablegrams Received.			Cablegrams Dispatched.			Total Cablegrams Received and Dispatched.		
	1926–27.	1927–28.	1928–29.	1926–27.	1927–28.	1928–29.	1926–27.	1927–28.	1928–29.
Number ..	690,625	710,501	727,256	720,496	759,823	808,812	1,411,121	1,470,324	1,536,068

(ii) *States.* The number of cablegrams received and dispatched in each State during the year 1928–29 is given hereunder :—

CABLEGRAMS.—STATES, 1928–29.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.(a)	Australia.
Number received ..	388,093	230,293	29,750	35,374	35,115	8,631	727,256
Number dispatched	415,813	256,167	38,048	43,296	46,083	9,405	808,812
Total ..	803,906	486,460	67,798	78,670	81,198	18,036	1,536,068

(a) Exclusive of interstate cablegrams, which are included with interstate telegrams.

5. **Cable and Radio (Beam) Rates.**—(i) *Ordinary Messages.* From 1st February, 1927, the cable rates (per word) between Australia and Great Britain were reduced as follows:—Ordinary, 2s. 6d. to 2s.; deferred ordinary, 1s. 3d. to 1s.; and Government, 1s. 4d. to 1s. 0½d., and substantial reductions were also made on the Canadian service (via Pacific) as from the same date. The following are the rates at present operating on traffic to the principal countries:—

CABLEGRAM AND RADIOGRAM RATES, JUNE, 1929.

To—	Rate per Word and Route.		
	Via Pacific.	Via Eastern.	Via Beam.
European Countries ..	2s. 6d. to 3s. 0d.	2s. 6d. to 2s. 7d.	1s. 11½d. to 2s. 5½d.
Asiatic Countries ..	5s. 4d. to 6s. 4d.	2s. 5d. to 4s. 1d.	..
Africa ..	..	1s. 7d. to 5s. 4d.	2s. 3½d. to 2s. 11d.
North America ..	1s. 7d. to 3s. 5d.	2s. 4d. to 4s. 4d.	1s. 5½d. to 3s. 7d.
Central America ..	3s. 8½d. to 5s. 4d.	5s. to 6s. 1d.	2s. 11½d. to 3s. 11d.
West Indies ..	3s. to 5s. 11d.	4s. to 6s. 2d.	..
South America ..	4s. 1d. to 6s. 8d.	4s. 1d. to 7s. 11d.	4s. to 6s. 3d.

(ii) *Deferred Cable or Radio (Beam) Messages.* Under this system a reduction of 50 per cent. in the ordinary cable or radio (Beam) charges is made under certain conditions. Any such messages which have not reached their destination within 24 hours may be transmitted in turn with full-rate messages. This service, together with "Daily Letter" and "Week-end" cable services, has affected the ordinary cable business to a considerable extent. "Deferred Press" cablegrams, subject to a delay of 18 hours, may be exchanged between Australia and (a) Great Britain at the rate of 4½d. per word by cable and 3d. per word via Beam wireless; (b) Canada, at 2½d. per word by cable and 2½d. per word via Beam wireless; and (c) United States of America, at 3d. to 4d. per word by cable and 3½d. to 4d. per word via Beam wireless.

(iii) *Daily Letter Services.* The "Daily Letter" service was inaugurated in September, 1923, between Australia and Great Britain and Canada, and has since been extended to most countries in the British Empire and in Europe and to the United States of America. "Daily Letter" messages are accepted subject to a maximum transit delay of 48 hours (including allowance for variations of times). The rates on messages (20 word minimum) to Great Britain are 9d. per word via "Pacific" or "Eastern," and 6d. per word via "Beam," while for United States of America the rate varies from 7d. to 9d. per word via cable and 6½d. to 8½d. via "Beam".

(iv) *Week-end Messages.* Week-end messages may be exchanged with certain specified countries at the rates indicated hereunder. Messages—which may be lodged at any post office—are forwarded to reach the transmitting station by post or telegraph by midnight on Saturdays and are deliverable to the addressees on Tuesday mornings. The rates per word for messages (20 word minimum) to the following countries are:—Great Britain, by cable 7½d., by wireless 5d.; Holland, Czecho-Slovakia, Italy, Algeria and Tunis 9d.; Canada, 5½d. and 5½d.; Newfoundland, 7½d. and 7d.; Fanning Island, 6d.; France, Austria, Norway and Switzerland, 8d.; and Sweden, Denmark, Germany and Luxembourg 7½d. A week-end letter telegram service between the Commonwealth and Papua and New Guinea was opened in December, 1929, the rate being 4½d. per word with a minimum charge of 7s. 6d. for 20 words.

(v) *Press Messages.* The rate per word on press messages exchanged with Great Britain is 6d. via cable and 4d. via Radio (Beam) service.

(vi) *Night Letter Service.* A night letter service for traffic between Australia and New Zealand was introduced on 1st May, 1924. The rate is fixed at 3s. per message of 20 words, and 2d. per word in excess of 20. On 1st December, 1924, the service was extended to take in traffic to and from Fiji at the rate of 5s. 10d. per message of 20 words, and excess words at the rate of 3½d. per word. Night letter telegrams are accepted at any time and are delivered by first post on the morning following receipt.

(vii) *Picturegram Service.* In keeping with the Department's desire that the Commonwealth telegraph service should include all modern methods of communication, a picturegram service was opened for public service between Sydney and Melbourne on 9th September, 1929. Any kind of picture or document may be accepted for transmission, the charges varying from 30s. to 67s. 6d., according to the size and grade of the picture or document to be transmitted.

§ 4. Telephones.

1. *Telephone Services.*—(i) *Mileage, etc., Australia.* The following table shows the mileage of lines, etc., for telephone purposes, giving trunk lines separately, on 30th June, 1927 to 1929 :—

TELEPHONE LINES.—AUSTRALIA, 30th JUNE, 1927 TO 1929.

Particulars.				1927.	1928.	1929.
Ordinary Lines—						
Conduits	..	..	duct miles	4,903	5,268	5,507
"	..	..	route miles	2,631	2,908	3,083
Conductors in aerial cables	..	..	loop mileage	7,441	7,254	6,055
Conductors in underground cables	..	..	"	576,298	632,890	691,170
Conductors in junction circuits	..	..	"	88,188	93,936	98,065
Open conductors	..	..	.. single wire mileage	344,370	383,352	408,559
Trunk Lines—						
Telephone trunk lines only	..	..	miles	120,282	211,133	224,150
Telegraph and telephone purposes	..	..	"	158,470	87,376	87,303

(ii) *Comparison with Other Countries.* Australia is steadily improving its position in the list of countries showing the most rapid advance in the use of the telephone, and it now occupies sixth place, with 793 telephones per 1,000 of population. This position may be considered highly satisfactory in view of the area and distribution of population in Australia and the average length of wire required to provide a subscriber's service. The average length of wire per telephone in Australia is 4.5 miles, as compared with 3.4 miles in the United States of America, 3.4 miles in New Zealand, and 2.9 miles in Canada.

(iii) *Government Policy.* A vigorous policy is pursued by the Government in providing telephone facilities, with the result that the system has developed rapidly during recent years. Many of the concessions have been of such a character as to render the services unremunerative, but it is considered that they are justified from the standpoint of national development. The adoption of the present policy has been the means of making telephone services available to a very large number of people, and particularly to those living in isolated localities. In providing facilities to meet present and future growth, full advantage is being taken of the best modern practices as adopted in other parts of the world.

(iv) *Trunk Line System.* The trunk line system of the Commonwealth aims to make the telephone service in Australia a nation-wide service and to improve long distance communication so that each subscriber may communicate with every other subscriber to the system. Notwithstanding the great distances separating the capital cities of the various States, commercial speech is now provided between practically all of the cities and towns in the Eastern States and South Australia, and satisfactory communication has been established over circuit distances of approximately 3,000 miles. The proposed telephone line between Adelaide and Perth has been sanctioned by the Federal Parliament, and this service should be in operation shortly. The Perth-Adelaide

channel will be 1,676 miles long, and will be the final link in the chain of communication extending from Cairns (Queensland) round the coast to Geraldton (Western Australia), a total distance of 4,672 miles. Investigations into the feasibility of linking Tasmania telephonically with the mainland are also proceeding and, when this service is provided, telephonic communication will be available between all the States. Substantial progress has been made with the introduction of the carrier system of telephony whereby several additional channels of communication may be obtained over one pair of wires, thus obviating the costly expenditure involved in erecting additional wire along important routes where the business justifies extra channels.

(v) *Automatic Exchanges.*—At 30th June, 1929, there were 55 automatic or semi-automatic exchanges in operation providing facilities for 132,450 subscribers, 129,089 of whom were in the metropolitan areas. Steady progress is being made with the work of converting the whole of the exchanges in the metropolitan networks to machine switching. Trials are being made with a specially constructed automatic unit for use at country exchanges, and the results at present are promising. The purpose of this equipment is to provide an economic day and night service at country exchanges, and it is hoped that the introduction of small automatic units will enable the benefits of continuous service to be more widely extended.

(vi) *Summary for States.* Particulars relating to the telephone service in each State for the years ended 30th June, 1927 to 1929, will be found in the following table :—

TELEPHONE SERVICES.—SUMMARY, 1927 TO 1929.

Particulars.	Year (30th June).	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
No. of Exchanges ..	1927	1,740	1,518	821	495	574	334	5,482
	1928	1,811	1,573	844	522	610	338	5,698
	1929	1,890	1,620	891	537	626	347	5,911
No. of Telephone Offices (Including Exchanges)	1927	2,870	2,129	1,413	739	955	523	8,629
	1928	2,867	2,287	1,408	759	956	521	8,788
	1929	2,892	2,340	1,415	776	958	526	8,907
No. of lines connected ..	1927	127,784	101,891	42,911	37,132	18,232	10,051	338,001
	1928	137,602	108,678	45,549	40,407	20,039	10,801	383,076
	1929	146,492	114,603	48,065	42,186	21,562	11,450	394,358
No. of instruments con- nected	1927	167,301	138,609	53,505	47,300	23,277	12,370	442,362
	1928	181,484	147,788	56,996	51,546	25,596	13,290	476,700
	1929	193,718	153,841	60,447	53,814	27,686	14,048	505,554
(a) No. of subscribers' instruments	1927	163,104	135,867	51,468	46,200	22,366	11,634	430,639
	1928	177,150	144,746	54,907	50,349	24,606	12,568	464,326
	1929	189,154	152,657	58,332	52,512	26,460	13,288	492,403
(b) No. of public tele- phones	1927	2,555	2,112	1,458	697	868	565	8,255
	1928	2,651	2,208	1,471	736	948	581	8,545
	1929	2,779	2,256	1,482	770	935	521	8,743
(c) No. of other local instruments	1927	1,642	630	579	403	43	171	3,468
	1928	1,683	834	618	461	42	191	3,829
	1929	1,785	928	683	532	291	239	4,408
Instruments per 100 of population	1927	7.03	8.03	5.98	8.22	6.05	5.94	7.17
	1928	7.46	8.39	6.25	8.86	6.41	6.81	7.58
	1929	7.84	8.82	6.52	9.22	6.73	6.61	7.93
Earnings	1927	£ 1,771,611	£ 1,320,005	£ 639,882	£ 521,867	£ 262,679	£ 120,670	£ 4,636,714
	1928	1,965,173	1,447,504	724,615	575,837	300,823	134,198	5,148,150
	1929	2,138,369	1,567,241	779,105	606,329	330,567	143,381	5,564,992
Working expenses ..	1927	1,437,290	1,012,061	590,284	444,825	239,528	139,319	3,864,207
	1928	1,503,342	1,187,404	597,332	532,428	257,270	160,739	4,238,515
	1929	1,668,407	1,218,232	567,787	561,992	252,047	159,353	4,427,818
Percentage of working ex- penses on earnings	1927	% 81.13	% 76.74	% 92.25	% 85.24	% 91.19	% 115.45	% 83.34
	1928	76.50	82.03	82.43	92.46	85.62	119.40	82.32
	1929	78.02	77.73	72.88	92.69	76.25	111.14	79.56

The number of instruments per 100 of population has increased from 7.17 in 1926-27 to 7.93 in 1928-29. The actual number of instruments has increased from 442,362 to 505,554, an increase of 14 per cent. Of the 505,554 instruments connected at 30th June, 1929, 221,725, or 43.9 per cent., were served by exchanges situated beyond the limits of the telephone networks of the six State capital cities. As a general rule, the metropolitan networks are limited to a radius of 15 miles from the General Post Office in Sydney and Melbourne, and 10 miles in the other State capital cities.

(vii) *Systems in Use.* The following table shows the percentage of Automatic, Common Battery, and Magneto Telephone lines at 30th June, 1927 to 1929 :—

PERCENTAGE OF AUTOMATIC, COMMON BATTERY, AND MAGNETO LINES,
1927 TO 1929.

System.	30th June.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Automatic	1927	37.2	24.4	18.5	18.3	32.8	..	27.2
	1928	40.9	30.3	18.3	28.4	33.1	..	31.8
	1929	42.5	34.9	19.1	33.1	33.6	..	34.5
Common Battery	1927	6.2	24.3	15.3	23.3	7.1	47.4	16.0
	1928	3.1	21.1	14.7	19.4	6.7	46.7	13.3
	1929	3.1	19.2	14.3	15.7	6.5	45.7	12.2
Magneto	1927	56.6	51.3	68.2	58.4	60.1	52.6	56.8
	1928	56.0	48.6	67.0	52.2	60.2	53.3	54.9
	1929	54.4	45.9	66.6	51.2	59.9	54.3	53.3

(viii) *Subscribers' Lines and Calling Rates.* The next table gives the number of subscribers' lines and the daily calling rate at central, suburban, and country telephone exchanges in the several States for the year 1928-29 :—

TELEPHONES.—SUBSCRIBERS' LINES AND DAILY CALLING RATE, 1928-29.

State.	Central Exchanges.		Suburban Exchanges.		Country Exchanges.		Total.	
	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.
New South Wales	15,278	13.18	65,706	3.86	60,127	2.25	141,111	4.18
Victoria ..	8,324	11.10	56,020	3.83	46,941	1.80	111,285	3.52
Queensland ..	6,778	8.94	11,610	3.13	29,142	2.57	47,530	3.61
South Australia	6,524	8.70	16,101	2.94	18,509	1.71	41,134	3.30
Western Australia	6,931	6.59	3,820	4.23	9,988	1.62	20,739	3.76
Tasmania ..	2,723	4.55	999	2.44	7,260	2.10	11,002	2.74
Australia ..	46,558	10.08	154,256	3.70	171,987	2.08	372,801	3.75

A comparison of the daily calling rates for each class of exchange shows that New South Wales registered the greatest number per line at central exchanges, Western Australia at suburban exchanges, and Queensland at country exchanges. For Australia as a whole, the average number of calls per line at central exchanges was nearly three times the number registered at suburban exchanges, while the average for suburban exchanges was slightly less than double the number shown for country exchanges.

(ix) *Trunk Line Calls and Revenue.* In the following table the number of telephone trunk line calls recorded, the amount of revenue received, and the average revenue per call are shown for each of the States for the years 1926-27 to 1928-29 :—

**TELEPHONES.—TRUNK LINE CALLS AND REVENUE FOR THE YEARS
1926-27 TO 1928-29.**

Particulars.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Australia.
Total Calls for Year—	No.	No.	No.	No.	No.	No.	No.
1926-27 ..	10,333,612	7,555,055	4,763,831	3,395,557	1,644,292	1,329,783	29,022,130
1927-28 ..	11,174,761	8,142,637	5,530,691	3,815,309	1,874,344	1,464,328	32,002,070
1928-29 ..	11,985,196	9,222,655	5,960,612	3,964,987	2,062,621	1,545,600	34,741,671
Total Revenue for	£	£	£	£	£	£	£
Year—							
1926-27 ..	382,489	258,635	221,337	131,932	77,512	39,197	1,111,102
1927-28 ..	422,195	287,783	266,950	149,390	89,370	43,502	1,259,190
1928-29 ..	472,858	338,837	298,190	162,494	100,678	46,405	1,419,462
Average Revenue per	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
Call—							
1926-27 ..	8.88	8.22	11.15	9.32	11.31	7.07	9.18
1927-28 ..	9.06	8.48	11.58	9.39	11.44	7.12	9.44
1928-29 ..	9.47	8.82	12.01	9.84	11.71	7.20	9.80

The number of trunk line calls recorded during 1928-29 increased by over 2½ millions over the figures for the previous year, and the average revenue per call increased by 0.36d.

The rapid growth in connexion with subscribers' services is bringing about increased trunk line traffic, and extensive works are in progress to meet the growing demand and to improve the trunk line system generally.

2. *Revenue from Telephones.*—Particulars regarding the revenue from telephone services are included in the tables at the end of § 1.

§ 5. Radio Telegraphy and Telephony.

1. *Radio Telegraphy and Telephony.*—(i) *General.* A statement in regard to the initial steps taken to establish radio telegraphy in Australia was given in Official Year Book No. 18, p. 343, but consideration of space precludes its repetition in the present issue.

With the exception of the war period, licences for experimental and amateur stations have been issued since 1911, with restrictions on the use of transmitting equipment.

The regulations were amended in 1920 with a view to encouraging the erection of "land" stations by pastoralists and others in remote districts, but very few satisfactory applications were received. The Department, however, at the end of 1925 opened stations at Wave Hill and at Camooweal to collect and distribute messages from private stations that might subsequently be erected in the Northern Territory or Western Queensland. One such station has been erected at Brunette Downs.

The Department took over a private station at Maria Island, Tasmania, on 1st June, 1927, and now operates it in conjunction with the Post Office at that point. During 1927, stations were erected by Amalgamated Wireless (Australasia) Ltd. at Salamoa and Bulolo, on the New Guinea gold-fields. The stations at Morobe and Marienberg have been closed.

Regulations under the Navigation Act require that all ships registered in Australia of 1,600 tons or more registered tonnage, or carrying more than 12 passengers, shall be fitted with an efficient radio telegraphy installation. At the end of June, 1930, there were 104 vessels so equipped.

(ii) *Broadcasting.* (a) *Licences, etc.* Details of the regulations governing wireless broadcasting and the issue of licences were given in Year Book No. 22, p. 342, but considerations of space preclude the repetition of such information in the present issue.

The National Broadcasting Service which is controlled by the Postmaster-General's Department, the programme services being provided under contract by the Australian Broadcasting Co., now operates two broadcasting stations in New South Wales and Victoria and one each in the other States with the exception of Tasmania. The Tasmanian station 7 Z.L. will be taken over by the National Service on 14th December, 1930.

Class "B" broadcasting stations are still under private control, but licences are issued on amended conditions which ensure satisfactory alternative programmes for listeners. The fee for these stations has been increased from £5 to £25, and the maximum period of the licence is now three years. Class "B" station licensees do not share in the listeners' licence fees, but rely for their income on revenue received from the broadcasting of advertisements and other such publicity.

The following tables show the number of each class of licence issued in each State, etc., during the years 1928-29 and 1929-30 :—

WIRELESS LICENCES, 1928-29.

Station Licence.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	Aust.	Papua.	Grand Total.
Coast	1	1	6	1	5	3	1	18	2	20
Ship	11	59	12	20	6	1	..	109	..	109
Land	6	3	2	..	1	..	..	12	1	13
Broadcasting—										
"A"	2	2	1	1	1	1	..	8	..	8
"B"	7	2	1	2	..	..	..	12	..	12
Broadcast listeners' ..	100,798	142,534	24,636	23,927	3,841	4,751	17	300,504	24	800,628
Experimental—										
Transmitting and receiving ..	193	184	68	71	43	26	..	585	4	589
Receiving only ..	21	32	12	6	6	5	..	82	..	82
Portable	6	2	6	1	..	..	..	15	..	15
Aircraft	1	..	..	..	..	..	..	1	..	1
Special	20	6	..	..	..	..	..	26	..	26
Total Licences Issued	101,066	142,825	24,744	24,029	3,903	4,787	18	301,372	31	801,408

WIRELESS LICENCES, 1929-30.

Station Licence.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	Aust.	Papua.	Grand Total.
Coast	2	1	6	1	5	3	1	19	2	21
Ship	10	55	12	20	6	1	..	104	..	104
Land	6	3	3	..	3	..	1	16	..	16
Broadcasting										
"A" (a) .. ..	..	5	3	3	1	2	..	23	..	23
"B"	9	..	..	..	..	..	..	..	..	..
Broadcast listeners' ..	111,080	139,887	23,247	25,651	5,715	6,032	20	311,632	16	811,648
Experimental	173	185	72	58	40	16	..	544	..	544
Portable	5	1	6	..	1	..	..	13	..	13
Aircraft .. ..	..	..	..	..	..	..	..	..	..	..
Special	18	11	..	..	2	..	..	31	..	31
Total Licences Issued	111,303	140,148	23,349	25,733	5,773	6,054	22	312,382	18	812,400

(a) Stations controlled by the Postmaster-General's Department. No "A" Class Broadcasting licences are now in existence, with the exception of 7 Z.L. Hobart, which expires on 14th December, 1930

(b) *Simultaneous Delivery.* Simultaneous broadcasting, which was successfully accomplished for the first time on 20th August, 1925, has now become the normal procedure on all occasions when it is desired to disseminate items of national interest throughout Australia. By means of the telephone trunk lines and amplifying apparatus the proceedings are distributed to the studios of the various stations of the National Broadcasting Service and in some cases relayed to oversea stations. In this manner, the listeners throughout Australia are simultaneously provided for.

(iii) *Beam Wireless.* The Beam wireless stations provided for under the agreement between the Commonwealth Government and Amalgamated Wireless (Australasia) Ltd. were completed early in 1927, and a direct beam wireless service to England was established on 8th April, 1927. A similar service to Canada, United States, and Mexico was opened on 16th June, 1928. Satisfactory communication is maintained daily over a period of hours, and the new services are being well patronized by the public. A comparison of the rates charged for "Beam" and Cable messages is given in § 3, Submarine Cables. Particulars of international traffic via "Beam" are given in para. (vi) (a) hereunder.

(iv) *International Wireless Telephone Service.* A wireless telephone service between England and Australia was opened on 30th April, 1930, Mr. Ramsay Macdonald and Mr. J. H. Scullin, the Prime Ministers of the respective countries, holding the inaugural conversation. The service is now available to most of the ordinary telephone subscribers of Europe and Australia. The fee for a conversation between Australia and England is £6 for a minimum of three minutes and £2 for each additional minute. The fee is slightly more for conversations to continental countries. Up till 30th June, 1930, 449 conversations had taken place, 312 originating in Australia and 137 in Europe.

(v) *Radio Stations (Pacific Ocean).* Radio-telegraphic stations have been erected at Suva, Ocean Island, Tulagi, and Vila under the control of the High Commissioner of the Pacific, while the New Zealand Government has erected high-power stations at Awanui (Auckland), Awarua (Bluff), and Apia (Samoa), and low-power stations at Auckland, Chatham Islands, Raratonga (Cook Islands) and Wellington.

(vi) *Radiotelegraphic Traffic.* (a) *International.* The following statement shows particulars of international traffic "via Beam" to and from United Kingdom and other places during the year ended 30th June, 1929 :—

RADIO TRAFFIC.—INTERNATIONAL, YEAR ENDED 30th JUNE, 1929.

Class of Traffic.	Number of Words Transmitted.			Number of Words Received.		
	United Kingdom.	Other Places.	Total.	United Kingdom.	Other Places.	Total.
Ordinary	857,064	382,072	1,239,136	571,378	136,973	708,351
Deferred	519,013	278,791	797,804	432,070	96,872	528,942
Government	58,670	6,901	65,571	58,298	337	58,635
Press (including Deferred press)	290,109	15,150	305,259	740,629	14,850	755,479
Daily letter and week-end telegrams(a)	4,096,671	717,258	4,813,929	2,352,290	171,656	2,523,946
Total	5,821,527	1,400,172	7,221,699	4,154,665	420,688	4,575,353

(a) Includes Christmas and New Year Greeting telegrams to and from the United Kingdom.

(b) *Coast Stations.* Particulars of the traffic handled by the several coast stations during the year 1928-29 are as follows:—

RADIO TRAFFIC.—COAST STATIONS, 1928-29.

State or Territory.	Total, Paying Words.	Particulars.			
		Messages.			
		Paying.	Service.	Weather.	Total.
	No.	No.	No.	No.	No.
New South Wales ..	571,590	34,590	1,314	3,230	39,134
Victoria ..	105,034	9,582	16	1,299	10,897
Queensland ..	657,294	33,284	1,058	5,284	39,626
South Australia ..	82,991	6,148	238	997	7,383
Western Australia ..	246,639	18,361	411	3,843	22,615
Tasmania ..	196,570	11,883	343	606	12,832
Northern Territory ..	59,564	2,528	504	1,848	4,880
Australia ..	1,919,682	116,376	3,884	17,107	137,367
Papua ..	290,308	24,419	637	1,090	26,146
Grand Total ..	2,209,990	140,795	4,521	18,197	163,513

(c) *Island Stations.* Particulars of the island radio traffic dealt with during the year 1928-29 are given hereunder:—

RADIO TRAFFIC.—ISLAND STATIONS, 1928-29.

Particulars.	To Australia.	From Australia.	Inter- Island.	Ship.	Service.	Total.
Messages ..	28,749	13,796	15,073	1,973	..	59,591
Words ..	411,008	261,974	256,556	28,282	..	957,820

(vii) *Proficiency Certificates.* Proficiency certificates for commercial wireless operators are issued by the Minister to individuals who pass the specified tests. Limited certificates in radiotelegraphy and radiotelephony, amateur operators' certificates and watchers' certificates are, in addition, issued to successful candidates at the prescribed examinations.

Every station, in respect of which a licence is issued, must be operated by a person holding a certificate of proficiency.

Certificates issued under the International Radiotelegraph Convention of London (1912) ceased to be valid on 31st December, 1929, after which date it became necessary for certificate holders to exchange their certificates for equivalent certificates issued under the provisions of the Washington Convention (1927). To 30th June, 1930, 91 first class and 253 second class certificates had been issued under the new conditions.

At 30th June, 1930, 1 limited certificate in radiotelegraphy, 10 limited certificates in radiotelephony, and 607 amateur proficiency certificates, in addition to 114 watchers' certificates, had been issued.

CHAPTER VIII.

FINANCE.

A. COMMONWEALTH FINANCE.

§ 1. General.

1. **Financial Provisions of the Constitution.**—The main provisions of the Constitution relating to the initiation and development of the financial system of the Commonwealth are contained in Chapter IV., "Finance and Trade," being sections 81 to 105 of the Constitution Act. Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51.

Section 69 provides for the transfer to the Commonwealth from the States of certain specified departments, while section 51, in outlining the powers of the Federal Parliament, implies the transfer or creation of various other departments. Section 87 deals with the financial relations between the Commonwealth and the States. These matters have been treated in some detail in previous issues of the Official Year Book up to and including No. 12, and further reference to them will not be made here.

The Commonwealth Treasury issues annually a document entitled "The Treasurer's Statement of Receipts and Expenditure during the year ended 30th June," with which is incorporated the report of the Commonwealth Auditor-General for the year. This series of annual statements is the principal authority for the majority of the tables given herein.

2. **Accounts of Commonwealth Government.**—The Commonwealth Government like the States Governments, bases its accounts mainly upon three funds, the Consolidated Revenue Fund, the Trust Fund, and the Loan Fund. The last mentioned fund came into existence in the financial year 1911-12, but on the outbreak of war it became so important that it was treated in two parts—a General Loan Fund mainly for purposes of Public Works, and a War Loan Fund for purely military purposes. The accounts of these funds are now so interwoven that a complete view of Commonwealth Finance can hardly be obtained by separate analyses of each. Two tables are therefore appended, showing receipts and disbursements from all sources for the last five years. The different funds will then be treated in detail in the subsequent paragraphs.

COMMONWEALTH RECEIPTS, 1924-25 TO 1928-29.

Heading.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Consolidated Revenue	67,697,124	70,201,049	75,541,761	73,808,227	74,894,908
Interest on States' Debts payable by States	1,157,685	2,084,757	2,626,474	2,861,995	4,089,643
Trust Funds in aid of Revenue ..	2,591,153	3,109,529	285,897	2,821,494	..
Deficit .. ..	..	..	..	2,628,743	(a) 2,358,975
Total	71,445,962	75,395,335	78,454,132	82,120,459	81,343,526
Loan Fund	16,565,704	32,814,796	7,755,173	32,603,133	15,659,389
Unexpended Balance from previous year	2,487,812	3,411,612	6,212,225	3,223,369	4,320,631
Total	19,053,516	36,226,408	13,967,398	35,826,502	19,980,020
Grand Total	90,499,478	111,621,743	92,421,530	117,946,961	101,323,546

(a) The accumulated deficit at 30th June, 1929, was £4,987,713.

COMMONWEALTH EXPENDITURE, 1924-25 TO 1928-29.

Heading.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Expenditure from Consolidated Revenue	£ 55,552,303	£ 60,963,425	£ 64,457,355	£ 67,353,784	£ 68,217,245
Balance paid into Special Trust Funds	3,109,530	285,897	2,821,494	..	..
Expenditure from Special Trust Funds	2,591,153	3,109,530	285,897	2,821,494	..
Payments to or for the States	7,535,291	7,951,727	8,262,912	9,083,186	9,030,638
Balance of Interest on States' Debts (Recoverable from States)	1,157,685	2,084,757	2,626,474	2,861,995	4,030,643
Special Redemptions from Revenue	1,500,000	1,000,000	..	..	..
Total	71,445,962	75,395,336	78,454,132	82,120,459	81,343,526
Loan Fund Expenditure—					
New Works, etc.	6,341,758	7,678,856	7,051,128	6,888,099	5,974,863
War and Repatriation	975,612	324,224	697,289	728,842	1,660,479
Redemptions	8,324,534	22,011,103	2,995,612	23,888,930	6,503,391
Unexpended Balance	3,411,612	6,212,225	3,223,369	4,320,631	(a) 5,841,282
Total	19,053,516	36,226,408	13,967,398	35,826,502	19,980,020
Grand Total	90,499,478	111,621,744	92,421,530	117,946,961	101,323,546

(a) Of this amount £4,987,718 has been temporarily advanced to meet the Consolidated Revenue Fund deficit.

§ 2. Consolidated Revenue Fund.

Division I.—Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on the fund, are contained in sections 81, 82, and 83 of the Constitution. Further particulars in this regard have been given in previous issues of this work.

Division II.—Revenue.

Sources of Revenue.—(i) *General.* The following table furnishes details of the revenue from each source and the amount per head of population under each of the three main headings during the years 1924-25 to 1928-29 :—

COMMONWEALTH CONSOLIDATED REVENUE—SOURCES, 1924-25 TO 1928-29.

Source.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Taxation (a)	52,835,690	54,373,005	58,994,809	56,637,858	56,303,489
Per head of population	£8 19 11	£9 1 6	£9 13 1	£9 1 9	£8 17 8
Public Works and Services (a)	10,331,523	11,121,524	12,084,553	12,907,304	13,404,412
Per head of population	£1 15 2	£1 17 1	£1 19 7	£2 1 5	£2 2 4
Other Revenue—					
Interest on States' Debts, payable by States	1,157,685	2,084,757	2,626,474	2,861,995	4,089,648
Other Interest, Discount, etc.	2,200,554	2,509,589	2,448,220	2,490,978	3,521,941
Coinage	107,275	332,014	373,071	203,252	92,898
Defence	139,078	130,662	152,494	132,877	117,614
Quarantine	36,599	30,553	40,451	31,547	26,284
Territories (b)	88,720	41,973	34,385	23,182	35,613
Patents, etc.	39,026	42,017	41,594	44,258	44,917
Lighthouses	205,170	198,353	202,143	212,490	210,162
Pension Contributions	51,868	56,781	51,575	55,439	44,291
Defence Trust Account	7,413				
Net Profit on Australian Note Issue	1,277,975	1,048,062	852,357	846,274	694,642
Miscellaneous	426,233	316,516	286,109	222,768	393,645
Total	5,687,596	6,791,277	7,088,873	7,125,060	9,276,850
Per head of population	£0 19 5	£1 2 8	£1 3 2	£1 2 11	£1 9 3
Grand Total	68,854,809	72,285,806	78,168,235	76,670,222	78,984,551
Per head of population	£11 14 6	£12 1 8	£12 15 10	£12 6 1	£12 9 3

(a) For details, see succeeding pages.

(b) Exclusive of Railways and other items which appear elsewhere under their appropriate headings.

(ii) *Taxation.*—(a) *Customs Revenue.* Particulars for the five years 1924-25 to 1928-29 are furnished in the following table:—

COMMONWEALTH CUSTOMS REVENUE, 1924-25 TO 1928-29.

Classes.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Stimulants	2,740,191	2,945,846	2,908,982	2,820,547	2,658,071
Narcotics	1,889,604	2,075,940	2,201,550	2,374,659	2,412,859
Sugar	10,414	20,438	20,112	16,797	11,654
Agricultural products	1,118,219	1,287,944	1,547,711	1,403,054	1,262,065
Apparel and textiles	5,524,439	5,179,366	6,233,206	5,802,848	5,362,694
Metals and machinery	4,433,374	4,895,918	5,654,629	5,284,993	4,949,249
Oils, paints, etc.	792,994	950,991	2,173,367	2,594,879	3,092,522
Earthenware, etc.	654,120	688,321	735,699	704,207	710,052
Drugs and chemicals	465,174	525,649	561,530	520,424	545,958
Wood, wicker and cane	1,152,269	1,349,687	1,384,469	1,594,825	1,583,145
Jewellery, etc.	875,365	866,799	951,691	845,099	870,130
Leather, etc.	1,576,032	1,770,373	1,577,765	1,124,091	743,948
Paper and stationery	724,370	682,745	751,254	760,448	762,357
Vehicles	3,038,209	3,064,427	3,340,556	2,534,738	3,193,211
Musical instruments	504,419	466,054	526,482	364,326	267,824
Miscellaneous articles	845,993	1,007,789	1,192,059	1,040,080	998,785
Other receipts	59,975	61,602	77,538	62,364	78,231
Total Customs	26,405,161	27,839,889	31,832,600	29,848,379	29,502,755

(b) *Excise Revenue.* Particulars concerning the amount of Excise collected under each head during each of the years ending 30th June, 1925 to 1929, are given hereunder :—

COMMONWEALTH EXCISE REVENUE, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Beer	5,642,646	5,847,974	6,103,004	6,155,661	6,190,725
Spirits	1,766,526	2,026,415	2,061,573	1,881,040	1,756,957
Tobacco	3,349,095	3,457,052	3,533,984	3,544,602	3,597,061
Starch	17,368	15,539	9,647	4,737	134
Licences	11,985	12,009	11,670	12,311	10,939
Total Excise ..	10,787,620	11,358,989	11,719,878	11,598,351	11,555,816

(c) *Land Tax.* Details in regard to rates of tax, etc., will be found in Official Year Book No. 14 at the end of Section XX. The following table shows the collections during the past five years.

COMMONWEALTH LAND TAX COLLECTIONS, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales ..	1,172,317	1,079,414	1,070,670	1,223,308	1,289,158
Victoria (a) ..	944,997	1,074,265	1,094,050	1,292,966	1,225,185
Queensland ..	114,874	46,138	79,445	84,756	84,723
South Australia ..	182,191	198,630	258,521	314,523	256,885
Western Australia ..	62,503	78,778	71,379	77,380	96,356
Tasmania ..	42,829	44,685	41,835	37,273	36,578
Total	2,519,711	2,521,910	2,615,900	3,027,206	2,988,885

(a) Including Central Office.

(d) *Estate Duty.* Collections from this source for the five years 1925 to 1929, are given hereunder :—

COMMONWEALTH ESTATE DUTY COLLECTIONS, 1924-25 TO 1928-29.

Year.	N.S.W.	Vic. (b)	Q'land.	S. Aust.(a)	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
1924-25 ..	604,358	496,723	87,820	116,950	58,380	16,820	1,381,051
1925-26 ..	547,712	515,570	95,827	180,991	41,993	29,243	1,411,336
1926-27 ..	479,011	544,600	128,096	159,405	26,051	25,188	1,362,351
1927-28 ..	666,588	634,999	126,316	181,160	99,056	43,999	1,752,118
1928-29 ..	627,103	1,068,138	151,448	125,776	65,672	42,112	2,080,149

(a) Including Northern Territory.

(b) Including Central Office.

(e) *Income Tax.* The first Commonwealth Income Tax was levied during the financial year 1915-16. The legislation on the subject comprises the Income Tax Assessment Act No. 34 of 1915, and subsequent amending Acts. Full details as to the original Acts are to be found in Commonwealth Official Year Book No. 9. The result of the last five years' collections was as follows :—

COMMONWEALTH INCOME TAX COLLECTIONS, 1924-25 TO 1928-29.

State in which Collected.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales (a) ..	3,579,546	3,640,219	4,365,567	3,606,463	3,704,763
Victoria (b) ..	5,159,331	4,703,200	4,564,995	4,691,068	4,225,958
Queensland ..	679,745	980,852	914,269	745,184	769,631
South Australia ..	1,110,015	844,076	803,730	669,904	667,077
Western Australia ..	327,607	501,982	367,565	336,657	343,849
Tasmania ..	277,226	185,024	108,130	114,165	127,997
Northern Territory ..	2,874	2,693	2,022	1,734	2,221
Total ..	11,136,344	10,858,046	11,126,278	10,165,175	9,841,496

(a) Includes Federal Capital Territory.

(b) Including Central Office.

Agreements between the Commonwealth and all the States except Western Australia made in 1923 provide that the Commonwealth Tax and the State Tax shall be collected by an officer acting for the Commonwealth and State, the Commonwealth appointing the State Commissioner as Deputy Commissioner for the State under the Income Tax Assessment Act of the Commonwealth. Provisions are included relating to the transfer of officers, the accounting of receipts, and the division of expenses. A joint form of Income Tax return is to be used in cases where the income is derived in one State only. The respective agreements are to remain in operation for a period of five years, and thereafter until the expiration of not less than six calendar months, upon notice in writing by either party to the agreement.

In Western Australia an arrangement was made previously by which the Commonwealth undertakes the collection of the State Income Tax.

(f) *Entertainments Tax.* The rate of Entertainments Tax, according to Amending Act No. 15 of 1922 which came into force on the 2nd October, 1922, is as follows :—For tickets of 1s., 1d. ; exceeding 1s., 1d. for the first shilling, and $\frac{1}{4}$ d. for every subsequent sixpence or part of sixpence. By an Amending Act (No. 23 of 1925) the rate is now two-pence halfpenny for a payment of two shillings and sixpence, and one halfpenny for every subsequent sixpence or part thereof. The collections for the last five years are given hereunder.

The decrease in the collections during the past two years is due to the remission of taxation on tickets for less than two shillings and sixpence.

COMMONWEALTH ENTERTAINMENTS TAX COLLECTIONS, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales (a) ..	274,791	183,856	160,393	159,944	158,273
Victoria ..	223,555	161,010	123,797	119,115	121,522
Queensland ..	76,533	48,745	36,048	30,922	34,083
South Australia ..	52,588	35,327	25,233	22,621	16,123
Western Australia ..	37,797	23,934	17,291	22,068	25,280
Tasmania ..	15,214	7,382	3,370	4,167	3,364
Northern Territory ..	108	72	27	28	52
Total ..	680,586	460,326	366,159	358,865	358,697

(a) Includes Federal Capital Territory.

(g) *War-Time Profits Tax.* Particulars relating to the levying of this tax, which came into force on the 22nd September, 1917, are given in previous issues of the Year Book. The result of the collections during the past five years are as shown hereunder. Amendments of earlier assessments entailed the payment of refunds in each of the last five years.

COMMONWEALTH WAR-TIME PROFITS TAX COLLECTIONS, 1924-25 TO 1928-29.

State in which Collected.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales ..	Dr. 78,079	9,642	56,698	Dr. 47,499	Dr. 27,013
Victoria (a) ..	5,428	Dr. 18,547	Dr. 18,788	Dr. 32,503	10,626
Queensland ..	Dr. 6,683	Dr. 35,553	Dr. 31,624	Dr. 6,784	8,814
South Australia ..	Dr. 386	Dr. 32,337	Dr. 11,615	Dr. 17,835	Dr. 16,416
Western Australia ..	316	51	Dr. 16,258	Dr. 4,022	..
Tasmania ..	4,621	Dr. 747	Dr. 6,770	Dr. 3,593	Dr. 320
Total ..	Dr. 74,783	Dr. 77,491	Dr. 28,357	Dr. 112,236	Dr. 24,309

(a) Including Central Office.

(iii) *Public Works and Services.*—(a) *Postal Revenue.* Particulars concerning this branch of revenue for each of the financial years from 1924-25 to 1928-29 are contained in the following table :—

COMMONWEALTH POSTAL REVENUE, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Private boxes and bags ..	52,301	55,813	59,184	61,346	79,101
Commission—					
Money orders and postal notes ..	192,809	201,445	229,453	240,392	244,976
Telegraphs ..	1,481,784	1,490,480	1,488,156	1,422,179	1,447,256
Telephones ..	3,599,864	4,044,414	4,576,863	5,034,051	5,459,559
Postage ..	4,333,461	4,580,354	4,847,317	5,006,019	5,177,177
Radio receipts ..	18,291	21,178	35,815	45,030	22,177
Miscellaneous ..	365,976	378,072	370,031	495,125	383,150
Total ..	10,044,486	10,771,756	11,606,819	12,304,142	12,813,396

The installation of additional telephones was responsible for the large annual increases under the item "Telephones" during each of the past four years.

(b) *Railway Revenue.* The Commonwealth Government is responsible for four lines—the Kalgoorlie-Port Augusta, the Port Augusta-Oodnadatta, the Darwin-Birdum and the Federal Capital Territory line. The appended table shows the amounts paid into the credit of the Consolidated Revenue Fund on account of each of these railways for the past five years.

COMMONWEALTH RAILWAY REVENUE, 1924-25 TO 1928-29.

Railway.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Kalgoorlie-Port Augusta ..	254,291	276,278	299,295	333,000	344,948
Port Augusta-Oodnadatta ..	(a)	27,035	105,988	191,115	185,811
Darwin-Birdum ..	29,105	38,879	62,202	68,844	50,259
Federal Capital Territory ..	3,641	7,576	10,249	10,203	9,998
Total	287,037	349,768	477,734	603,162	591,016

(a) Operated by South Australian Railways; loss on working paid by Commonwealth Government.

Further detailed particulars are stated in Chapter VII., part B, Railways.

(iv) *Other Sources of Revenue.*—(a) *Interest, Discount, etc.* The most important investments of the Commonwealth Government from which interest is derived are—Loans to States, General Trust Funds, Loans placed in London, Fixed Deposits with the Commonwealth and other Banks, and certain advances and overdrafts. In 1928-29 they included interest on Loans and Advances to States, payable by States, £4,089,643; Interest on General Trust Fund Investments, £264,475; and Interest, Nauru Island Agreement, £85,960.

(b) *Other.* During 1928-29 the following contributions to Consolidated Revenue were made in respect of Coinage, £92,898; Defence, £117,614; Patents and Trade Marks, etc., £44,917; Marine, £210,162; net profit on Australian Note Issue, £694,642; and Miscellaneous, £504,833.

Division III.—Expenditure.

1. *Nature of Commonwealth Expenditure.*—The disbursements by the Commonwealth Government of the revenue collected by it fell naturally, under the "book-keeping" system, into three classes, viz. :—

- (a) Expenditure on transferred services.
- (b) Expenditure on new services.
- (c) Payment to States of surplus revenue.

Of these three, only the first two were actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution, the expenditure on transferred services was, under the "book-keeping" system, debited to the several States in respect of which such expenditure was incurred, while the expenditure on new services was distributed *per capita*. Surplus Commonwealth revenue was paid to the States monthly. Until the end of the year 1903-4, new works, etc., for transferred departments were treated as transferred expenditure, and were charged to the States on whose behalf the expenditure had been incurred. In subsequent years all such expenditure was regarded as expenditure on new services, and distributed amongst the States *per capita*. Under the arrangement, which superseded the "book-keeping" system, a specific subsidy of 25s. per head of population was made annually by the Commonwealth to the States, and there was no further debiting of expenditure to the several States. The States Grants Act (No. 4 of 1927) provides for the abolition of the *per capita* payments as from 30th June, 1927. From 1st July, 1928, the provisions of the temporary Agreement between the Commonwealth and the several States under the *Financial Agreement Act* 1928 were operative. Particulars of this agreement were given in some detail in the previous issue of this work.

* For an exposition of the "book-keeping system" see Commonwealth Year Book No. 6, page 780.

2. Details of Expenditure from Consolidated Revenue.—(i) *General.* The following table gives details of the expenditure from Consolidated Revenue during the last five years. Particulars for each individual Department are stated hereinafter.

**COMMONWEALTH EXPENDITURE—CONSOLIDATED REVENUE,
1924-25 TO 1928-29.**

Heads of Expenditure.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Cost of Departments	27,828,750	30,091,322	32,215,254	34,720,926	34,897,185
Miscellaneous—					
New Works	343,016	317,037	224,807	229,626	274,730
War Services	28,482,761	29,171,850	29,309,083	29,006,212	30,097,751
Payments to or for the States ..	7,535,291	7,951,727	8,262,912	9,085,789	9,036,638
Interest—State Loans Act ..	1,157,575	2,084,757	2,623,853	2,861,995	4,089,643
Special Defence Provision ..	988,139	3,742,745	996,729	4,215,911	947,579
Federal Aid Roads	500,000	750,000	2,000,000	2,000,000	2,000,000
Special Debt Redemptions ..	1,500,000	1,000,000	..	..	..
Total	68,336,432	75,109,438	75,632,638	82,120,459	81,343,526
Per head of population ..	£11 12 9	£12 10 8	£12 7 7	£13 3 6	£12 16 9

The items included under the above general heads are referred to in some detail in the succeeding sub-sections.

(ii) *Cost of Departments.*—(a) *Governor-General.* Section 30 of the Constitution enacts that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connexion with the Governor-General and establishment for the five years 1924-25 to 1928-29 is as follows :—

**EXPENDITURE.—GOVERNOR-GENERAL AND ESTABLISHMENT,
1924-25 TO 1928-29.**

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Salary	10,000	10,000	10,000	10,000	10,000
Governor-General's Establishment ..	9,924	12,761	13,950	10,152	21,576
Contingencies (a)	6,061	6,314	6,469	6,361	7,118
Interest on Commonwealth Treasury Bills ..	792	853	853	853	853
Total	26,777	29,928	31,272	27,366	39,547

(a) Represents official services outside the Governor-General's personal interests, and carried out mainly at the instance of the Government.

(b) *Parliament.* Under this head have been grouped all the items of expenditure connected with the Parliamentary government of the Commonwealth for the last five years.

EXPENDITURE.—COMMONWEALTH PARLIAMENT, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29
	£	£	£	£	£
Salaries of Ministers	14,408	15,300	15,300	15,300	15,300
Allowances to Senators	35,135	34,769	35,635	35,251	35,541
Allowances to Members of House of Representatives	74,628	66,055	74,190	74,278	73,719
Officers, staff, contingencies, etc. ..	60,353	64,089	71,837	81,941	73,940
Repairs, maintenance, etc. ..	2,284	2,281	1,832	4,459	6,179
Printing	24,323	28,182	24,623	37,888	24,938
Travelling expenses of Members and others	19,898	20,144	20,897	28,074	26,725
Insurance	342	342	45	..	..
Electoral Office	81,791	83,285	87,007	88,226	86,410
Election expenses	2,951	106,704	107,051	875	118,831
Administration of Electoral Act ..	32,437	41,568	43,702	31,260	41,019
Miscellaneous	6,707	6,700	55,515	22,378	54,643
Total	355,257	469,419	537,634	419,930	557,245

In section 66 of the Constitution, provision is made for payment out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers of State, of an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This was modified in 1915-16, when the Minister of the Navy was given separate Cabinet rank. Allowances to Senators and Members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides, each such allowance shall consist of £400 a year reckoned from the day on which the member takes his seat. During the second session of the Parliament in 1907 an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907. In 1920, the salaries of members of both Houses were further increased to £1,000 per annum.

(c) *Prime Minister's Department.* This Department was created during the financial year 1911-12. In addition to the services indicated below this Department administers the external Territories of New Guinea, Papua, Nauru, and Norfolk Island. For convenience particulars of expenditure on account of these Territories are stated hereinafter under that heading. The expenditure for the last five years is shown in the following table:—

EXPENDITURE.—PRIME MINISTER'S DEPARTMENT (a), 1924-25 TO 1928-29.

Details.	1924-25	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Salaries, contingencies, etc. ..	41,521	41,483	47,475	57,749	62,940
Audit Office	36,738	33,459	36,511	34,877	36,816
Rent, repairs, etc.	10,094	8,454	8,351	32,142	21,789
Public Service Board's Office ..	51,059	50,485	52,628	55,946	54,864
High Commissioner's Office ..	60,691	63,744	63,220	80,820	66,133
Commissioner for Australia in United States of America ..	14,894	12,270	12,966	13,808	10,134
Interest and Sinking Fund ..	707,240	726,813	772,003	860,876	994,629
Mail service, Pacific Islands ..	52,834	50,418	53,092	52,051	49,750
Secretariat, League of Nations ..	25,500	24,893	24,975	23,994	25,759
Immigration	63,058	93,588	108,746	..	..
Development and Migration Commission .. ..	..	..	..	124,092	117,487
Scientific and Industrial Research ..	24,796	382,564	11,803	269,629	19,451
Miscellaneous	174,669	83,548	193,005	70,131	55,955
Total	1,263,094	1,571,719	1,384,775	1,676,115	1,515,707

(a) Excluding Territories, see page 255.

(d) *Attorney-General's Department.* The extra expenditure connected with this Department of late years has been caused in a large measure by the extension of the Federal Arbitration Court, the creation of the Bankruptcy Administration, and increases in the items "Patents, Trade Marks, etc." and "Rent, Repairs, etc." Details for the five years 1924-25 to 1928-29 are furnished hereunder:—

EXPENDITURE.—ATTORNEY-GENERAL'S DEPARTMENT, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Attorney-General's Office	19,555	21,596	26,801	17,337	24,389
Crown Solicitor's Office	21,997	22,690	24,465	23,626	29,392
Salaries of Justices of High Court	21,500	21,500	21,500	21,500	21,328
High Court expenses	13,269	14,000	14,994	13,511	15,218
Court of Conciliation and Arbitration	11,995	12,958	23,162	26,775	26,641
Public Service Arbitrator's Office	4,027	3,953	4,220	4,368	4,465
Rent, repairs, etc.	11,472	12,571	12,039	20,004	24,110
Patents, Trade Marks, etc.	45,598	48,691	48,119	52,671	51,477
Investigation Branch	9,184	9,970	10,189	10,769	10,951
Bankruptcy .. ..	..	..	..	3,102	17,831
Miscellaneous	10,418	17,498	13,021	33,031	20,941
Total	169,015	185,427	198,510	231,697	246,743

(e) *Treasurer's Department.* The sub-departments under the control of the Commonwealth Treasurer are the Treasury, the Pensions Department, the Taxation Office, the Supply and Tender Board, and Superannuation Fund Management Board. Details of the expenditure of this Department for the last five years are given below.

EXPENDITURE.—TREASURER'S DEPARTMENT, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Treasury	54,413	51,808	52,585	53,418	54,548
Taxation Office	463,176	426,425	416,889	452,738	428,873
Pensions Office	92,999	97,761	114,446	117,071	83,891
Maternity Allowance Office	16,117	15,384	16,067	15,297	16,464
Coinage	23,836	54,905	45,968	43,008	19,540
Rent, repairs, etc.	12,993	15,302	10,209	16,371	15,672
Miscellaneous	54,306	45,583	42,398	79,180	97,662
Departmental Expenditure	717,840	707,168	693,562	777,083	716,650
Invalid and Old-age Pen- sions (a)	6,896,401	8,146,636	9,034,938	9,681,837	9,991,299
Maternity Allowance	688,205	680,855	660,280	678,920	661,520
Maintenance of persons in charitable institutions	96,504	105,751	109,651	108,509	132,940
Total	8,398,950	9,640,410	10,503,431	11,246,349	11,502,409

(a) Including the following amounts spent from Trust Funds:—In 1924-25, £1,723,162; 1925-26, £1,884,530; 1926-27, £285,897; and in 1927-28, £1,421,493.

(f) *Trade and Customs.* Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar and other bounties, and the expenses in connexion therewith. Particulars for the five years 1924-25 to 1928-29 are given in the following table:—

EXPENDITURE.—TRADE AND CUSTOMS DEPARTMENT, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Chief Office	578,492	62,540	60,423	69,029	70,814
Customs (ordinary) ..		513,190	534,201	563,055	569,168
Marine—					
Navigation	44,484	44,726	44,872	280,225	270,950
Lighthouses	184,298	199,057	230,439		
Audit (proportion) ..	1,552	11,030	12,487	10,045	9,421
Pensions and retiring allowances	33,283	34,091	35,145	36,618	39,468
Rent, repairs, etc. ..	23,322	21,950	19,102	24,251	21,834
Bounties	287,217	498,582	781,347	890,574	532,564
Interest on transferred properties	47,217	46,986	46,924	66,985	66,985
Interest on Commonwealth securities	13,667	21,224	22,507	23,033	24,519
Miscellaneous	3,099	19,959	24,304	38,330	28,392
Total	1,225,631	1,473,335	1,811,751	2,002,145	1,634,115

(g) *Defence.* The expenditure in connexion with Defence for the last five years is as follows:—

EXPENDITURE.—DEFENCE, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Chief Office	103,438	103,913	109,475	107,805	109,078
Military	1,269,799	1,307,815	1,299,454	1,284,886	1,270,443
Naval	1,842,937	1,943,911	2,003,639	1,930,861	1,808,247
Air Services	205,002	254,882	381,982	377,176	407,033
Audit (proportion) ..	9,474	8,625	9,433	8,737	9,148
Pensions and retiring allowances	7,566	13,884	15,221	19,095	22,805
Rents, repairs, etc. ..	98,168	108,258	94,977	83,179	92,051
Interest on transferred properties	95,706	94,121	95,154	135,882	135,882
Interest on Commonwealth securities	100,162	123,028	142,705	152,623	166,915
Miscellaneous	52,163	46,390	88,791	85,575	82,906
Total	3,784,415	4,004,827	4,240,831	4,185,819	4,104,508

(h) *Postmaster-General's Department.* Details of the expenditure of this Department for the last five years are given in the table hereunder:—

EXPENDITURE.—POSTAL DEPARTMENT, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Chief Office	48,643	51,660	66,504	77,469	80,440
Postal Department (ordinary) ..	8,950,694	8,705,960	9,115,787	9,811,847	9,831,131
Audit (proportion)	10,630	10,009	10,359	11,149	11,593
Pensions and retiring allowances ..	95,928	102,518	110,429	102,173	110,605
Superannuation	45,687	59,136	75,563	93,431	112,546
Rents, repairs, etc.	142,831	146,859	137,096	151,109	127,855
Interest on transferred properties ..	198,923	(a)315,398	203,978	290,262	290,262
Interest on Commonwealth Securities	494,054	855,507	1,084,431	1,194,453	1,403,069
Sinking Fund on Commonwealth Securities	269,469	355,891	416,161	475,009	518,060
Miscellaneous	31,579	48,987	65,591	186,074	195,164
Total	10,288,438	10,651,925	11,285,899	12,392,976	12,680,725

(a) Includes £110,734 arrears of interest on value of Overland Telegraph Line, Adelaide to Darwin.

(i) *Home Affairs.* In addition to the undermentioned services this Department, created in the financial year 1916-17, controls the Territories of North and Central Australia, and the Federal Capital Territory. Expenditure in respect of these Territories is included in sub-section (ii) (m) following. The Electoral Office which is administered by this Department is for the purposes of this Chapter shown under Sub-section (ii) (b) ante.

EXPENDITURE.—HOME AFFAIRS DEPARTMENT(a) 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Chief Office	27,891	37,158	48,328	51,228	50,998
Census and Statistics	23,394	26,240	27,620	29,170	30,697
Meteorological Office	34,656	34,561	36,616	36,103	35,935
Interest—					
On Commonwealth Securities ..	1,520	2,992	2,055	2,063	2,052
On Transferred Properties ..	1,984	891	470	672	672
Sinking Fund	491	574	455	455	455
Rent, repairs, etc.	15,281	12,065	12,293	16,579	24,436
Miscellaneous	40,569	180,468	203,631	92,648	31,471
Total	145,786	294,949	331,468	228,918	176,716

(a) Excluding Territories, see page 255.

(j) *Works Department.* The extension of Commonwealth Works and Railways led, in 1916-17, to the separation of these branches from the former Home Affairs Department and the constitution of a separate Works and Railways Department. To this Department was entrusted the administration of the railways originally under

the control of the old External Affairs Department and the Lands and Survey branch, which was transferred to it from the Department of Home and Territories in 1925-26. During 1927-28 the administration of the Commonwealth Railways was transferred to the Markets and Transport branch. The expenditure for the last five years was as follows :—

EXPENDITURE.—WORKS DEPARTMENT, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Chief Office ..	48,530	56,924	32,752	24,809	26,363
Lands and Survey ..					
Interest—					
On Commonwealth Securities..	40,479	58,108	68,112	76,718	91,716
On Transferred Properties ..	..	1,654	2,067	4,171	4,171
Sinking Fund	4,358	5,522	6,735	8,158	8,990
Miscellaneous	14,643	10,669	13,274	9,034	8,899
Total	108,010	132,877	122,940	122,890	140,139

(k) *Health Department.* This department came into existence in the financial year 1921-22. Details of expenditure are as follow :—

EXPENDITURE.—HEALTH DEPARTMENT, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Central Administration ..	12,432	13,543	18,488	23,769	22,791
Salaries, Contingencies, etc. ..	79,392	83,396	85,146	91,746	93,203
Interest on C'wealth Securities ..	2,083	3,128	3,359	3,460	4,070
Interest on Transferred Properties	7,674	7,668	8,356	9,324	9,324
Rent and repairs	11,000	17,746	22,553	23,914	21,126
Miscellaneous	75,218	58,688	71,232	222,124	140,599
Total	187,799	184,169	209,134	374,337	291,113

During 1927-28, £100,000 expended on the purchase of radium is shown under "Miscellaneous."

(l) *Markets and Transport Department.* The Department of Markets, which was formed in the financial year 1924-25, took over various functions previously performed by other departments. In 1927-28 the Commonwealth Railways administration

was placed under this department, the name being altered to "Markets and Transport." Expenditure on Railways services is shown under a separate heading for the purposes of this Chapter. See sub-section (ii) (n) *post*. Details of expenditure are as follow :—

**EXPENDITURE.—MARKETS AND TRANSPORT DEPARTMENT, 1924-25
TO 1928-29.**

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Salaries and contingencies ..	38,278	44,833	51,140	59,744	59,456
Administration of Commerce Act ..	35,864	33,685	27,403	29,961	30,581
Dried Fruits Export Control ..	19,072	29,229	30,791	27,623	42,753
Dairy Produce Export Control ..	..	26,728	20,664	21,294	22,374
Fruit Pool Losses ..	154,000	..	..	..	..
Assistance to Primary Production Interest—	500,000	..	..	..	50,000
Grafton-South Brisbane Rail-way ..	..	39,113	85,067	128,211	173,651
Other ..	..	..	11,558	13,908	26,201
Sinking Fund ..	..	4,499	11,718	18,998	22,014
Miscellaneous ..	74,744	41,103	47,567	19,803	22,142
Total ..	821,958	219,190	285,908	319,542	449,172

(m) *Territories.* The following table shows the expenditure on account of Territorial services for the past five years. The Internal Territories are administered by the Department of Home Affairs, while the Prime Minister's Department controls the External Territories. The expenditure has been grouped in one table for convenience of reference.

EXPENDITURE, TERRITORIES, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Internal—					
North and Central Australia ..	145,685	147,120	150,646	132,758	145,381
Federal Capital Territory ..	80,840	93,772	141,176	286,879	251,348
External—					
Papua ..	71,239	96,745	72,470	58,947	57,411
New Guinea ..	10,064	10,214	11,785	13,490	13,346
Norfolk Island ..	3,500	3,945	4,339	4,000	4,000
Total ..	311,328	351,796	380,416	496,074	471,486

(n) *Railways.* During 1928-29 the Commonwealth Railways were transferred from the Department of Works and Railways to the Department of Markets and Transport. The following table of expenditure for the past five years is shown separately from the expenditure of the other services controlled by the latter Department.

COMMONWEALTH RAILWAYS EXPENDITURE, 1924-25 TO 1928-29.

Details.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Trans-Australian	285,912	285,876	271,398	286,175	301,621
North Australia	136,267	138,645	57,580	67,967	54,697
Central Australia .. ..	..	70,703	130,122	165,306	198,213
Federal Capital Territory ..	1,839	4,999	6,818	9,588	10,504
Interest	259,686	328,516	366,073	407,646	462,728
Sinking Fund	33,355	35,262	40,502	47,411	50,519
Miscellaneous	25,233	17,349	18,842	12,675	9,278
Total	742,292	881,350	891,335	996,768	1,087,560

(iii) *Miscellaneous.* (a) *New Works.* Particulars of the expenditure on new works, etc., during the last five years are given in the following table :—

EXPENDITURE ON NEW WORKS, 1924-25 TO 1928-29.

Department.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Parliament .. ..	..	..	..	..	..
Prime Minister	1,653	5,844	42	237	195
Treasury .. ..	..	..	..	..	72
Attorney-General .. ..	..	3,251	..	..	600
Trade and Customs	6,234	714	837	12,081	15,772
Defence	309,277	247,398	177,992	170,219	128,728
Postmaster-General .. ..	..	..	..	874	9,347
Home Affairs .. ..	..	..	253	890	30,113
Works .. ..	..	603	330	..	..
Health	10,139	8,018	3,078	9,013	20,961
Markets and Transport .. ..	..	410	..	..	..
Territories	16,613	33,725	30,804	36,312	68,942
Railways .. ..	..	17,074	11,471	..	..
Total	343,916	317,037	224,807	229,626	274,730

(b) *War Services.* Full details concerning the expenditure from Consolidated Revenue upon War and Repatriation will be found in a later sub-section.

(c) *Interest—State Loans Act.* The amount of £4,089,643 is the interest on moneys borrowed by the Commonwealth and advanced to the States. (See page 244.)

Division IV.—Subsidy Paid to States.

Particulars of the amounts paid to each State under the *Surplus Revenue Act* 1910, and various State Grants Acts, are contained in previous issues. The appended table shows for the past two years the payments to or for the States. Details of the provisions of the *Financial Agreement Act* 1928, relating to payments to the States, were given in Official Year Book No. 22.

PAYMENTS TO OR FOR THE STATES, 1927-28 AND 1928-29.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
	£	£	£	£	£	£	£
1927-28.							
Contributions towards							
Interest on State Debts..	2,917,411	2,127,159	1,096,235	703,816	473,432	266,859	7,584,912
Sinking Fund on State							
Debts	296,286	178,429	181,784	107,143	78,035	28,597	820,274
Special Grants .. ..	..	..	..	..	300,000	378,000	678,000
Total	3,213,697	2,305,588	1,228,019	810,959	851,467	673,456	9,083,186
1928-29.							
Contributions towards							
Interest on State Debts..	2,917,411	2,127,159	1,096,235	703,816	473,432	266,859	7,584,912
Sinking Fund on State							
Debts	340,889	203,642	144,207	121,812	91,471	29,705	981,726
Special Grants .. ..	..	..	..	..	300,000	220,000	520,000
Total	3,258,300	2,330,801	1,240,442	825,628	864,903	516,564	9,036,638

In addition to the foregoing, the Commonwealth contributed £2,000,000 during each year in respect of Federal Aid Roads.

Division V.—Surplus Revenue.

Until the end of 1906-7, the balance of the Consolidated Revenue Fund was paid to the States. From 1907-8, until the abolition of the book-keeping provisions of the Constitution, the States received only three-fourths of the net Customs and Excise Revenue, and the balance of the Consolidated Revenue Fund was transferred to the Invalid and Old-age Pensions Trust Account and the Naval Defence Trust Account to provide for expenditure in subsequent years. A statement of surpluses and deficiencies for the past five years is appended hereto.

COMMONWEALTH SURPLUS REVENUE, 1924-25 TO 1928-29.

Year.	Surplus.	Deficiency.	Accumulated Surplus at end of Year.	Accumulated Deficit at end of Year.
	£	£	£	£
1924-25	518,376	..	3,109,529	..
1925-26 .. ..	..	2,823,632	285,897	..
1926-27	2,535,597	..	2,821,494	..
1927-28 .. ..	..	5,450,237	..	2,628,743
1928-29 .. ..	..	2,358,975	..	4,987,718

The following payments totalling £2,820,000 were made out of the surplus of £2,821,494 available at 30th June, 1927, and brought to account as expenditure during 1927-28 :—Naval Construction and Defence Reserve, £2,250,000 ; Science and Industry Investigations, £250,000 ; Civil Aviation, £200,000 ; Purchase of Radium, £100,000 ; and Geophysical Survey of Australia, £20,000. The result of the ordinary transactions of the year 1927-28, omitting these special appropriations, was therefore a deficit of £2,630,237.

§ 3. Trust Funds.

The Trust Fund balances on 30th June, 1929, totalled £11,957,383 as compared with £13,699,231 for the corresponding date in the year 1928. Details concerning the most important trust accounts are contained in Finance Bulletin No. 20 issued by this Bureau.

§ 4. Commonwealth Loan Funds and Public Debt.

1. *General.*—Although it was not until 1915 that the Federal Government came into the loan market as a borrower, there had previously existed a Commonwealth Public Debt which included several items, such as the balance of the debt taken over from South Australia and the money owing to the States for transferred properties. The debt still includes the items mentioned, in addition to the General Loan Fund, the loans for military purposes, etc. In view of the large expansion of the Public Debt, and its present importance in Commonwealth public finance, the different items are treated seriatim in the following sub-sections :—

2. *Loans taken over from South Australia.*—The first portions of the debt were contracted at the beginning of 1911, when the Commonwealth assumed responsibility for the payment of interest on transferred properties (further dealt with in sub-section 4) and for the administration and the liabilities of the Northern Territory and the Port Augusta-Oodnadatta Railway. At 30th June, 1911, the debt on account of the former was £3,657,836, and on account of the latter, £2,274,486—a total of £5,932,322. As the securities fall in they are redeemed by the Commonwealth Government, the money required being taken from the Loan Fund. The item is thus constantly diminishing, and on 30th June, 1929, stood at £2,034,020, of which £1,112,974 was on account of the Northern Territory, and £921,046 on account of the railway.

3. *Loan Fund for Public Works Redemptions, etc.*—Up to the year 1911 the Commonwealth Government had met its Public Works expenditure out of revenue. In that year, however, in view of the heavy prospective cost of the Transcontinental Railway and the Federal Capital Territory, it was decided to institute a Loan Fund similar to those of the States. The initiation of this Fund was greatly assisted by the fact that the Treasury at that time held a large quantity of gold, principally on behalf of the Australian Notes Account. Up to 30th June, 1914, the money required for loan expenditure was obtained mainly from this source at 3½ per cent., and inscribed stock of an equivalent value was created. Since the outbreak of war, the money required for the Loan Fund has been mainly obtained by the issue of Treasury Bills and other securities issued in London

and New York as well as in Australia. The details of the expenditure for the last five years and the total expenditure to 30th June, 1929, are given in the following table:—

COMMONWEALTH LOAN EXPENDITURE FOR WORKS, 1925 TO 1929, AND TOTAL.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Total to 30th June, 1929.
	£	£	£	£	£	£
Immigration (a)	181,193	262,589	248,104	261,353	132,815	1,623,130
Shipbuilding Yards and Docks ..		..	..			733,710
Ship Construction	162,953	..	..	Cr. 163,216	Cr. 86,784	8,724,060
Subscriptions to Capital of Commonwealth Oil Refinery ..	93,750	..	..	..	..	343,751
Federal Capital Territory Works, Services, and Acquisition of Land	294,857	Cr. 164	..	..	638,500	2,653,197
Drill Halls, Stores, Barracks, etc. ..	20,350	19,767	18,158	26,984	33,014	406,422
Rifles and Ammunition Reserve ..	..	..	..	..	..	315,300
Other Military Services	4,300	2,957	12,978	9,831	231	100,959
Naval Bases, Depots, etc.	24,798	Cr. 14,810	127,016	62,303	36,907	1,367,038
Fleet Construction .. .. .	..	..	..	..	..	355,397
Other Naval Services	4	24,000	24,000	..	..	71,300
Air Services—						
R.A.A.F.	2,880	126,315	140,364	103,227	40,530	431,503
Civil Aviation	3,225	6,798	5,516	8,916	..	40,178
Buildings and Works, Munitions Production	219,397	116,694	93,098	101,308	92,513	1,064,258
Other Munitions Supply	1,125	23	2	..	..	1,150
Lighthouses and Lighthouse Services	168,332	67,359	24,927	23,475	17,673	535,880
River Murray Waters Act	192,500	205,000	209,500	250,000	250,000	1,783,625
Telegraph and Telephone Construction	3,979,596	5,065,798	3,627,619	3,357,432	2,775,991	26,239,281
Post Office Buildings and Land ..	553,286	472,835	317,706	296,931	227,397	3,136,006
Wireless	66,610	79,560	50,462	50,564	432	344,845
Serum and Health Laboratories ..	3,470	16,500	4,785	4,753	10,032	71,472
Wire and Wire-netting .. .. .	..	..	250,000	80,000	230,838	560,838
Railways—						
Trans-Australian	52,113	69,565	88,199	54,896	48,415	6,567,298
North Australian	50,535	195,123	398,764	425,875	79,092	1,576,552
Central Australian	211,074	91,490	399,885	731,388	747,894	2,276,757
Federal Capital Territory	1,205	..	20,500	4,424	3,291	28,215
Grafton—South Brisbane .. ..	..	840,000	1,000,000	1,202,000	675,000	3,717,000
Other Expenditure .. .. .	..	..	..	..	..	200,000
Acquisition of Properties not elsewhere included	43,792	14,199	833	655	987	123,121
London Offices	1,583	500	..	..	..	880,100
Miscellaneous	8,830	16,758	Cr. 11,288	..	20,000	411,951
Total	6,341,758	7,678,856	7,051,128	6,888,099	5,974,863	66,684,434

(a) Exclusive of Loans to States for Immigration Purposes.

4. Properties Transferred from States.—At the time of Federation, when the Commonwealth took over the control of a great many departments previously administered by the States, a large amount of property was handed over to the Commonwealth Government. A valuation was made, with results set out in detail in Official Year Book No. 14, page 694, and the Commonwealth paid interest at the rate of $3\frac{1}{2}$ per cent. to the States on account of all the transferred properties.

The terms of the Financial Agreement between the Commonwealth Government and the Governments of the several States provided, *inter alia*, that, as a temporary measure, the Commonwealth Government would for a period of two years from 1st July, 1927, to 30th June, 1929, pay to each State interest at the rate of 5 per cent. per annum on the agreed value of transferred properties as follows:—New South Wales, £4,788,005; Victoria, £2,302,862; Queensland, £1,560,639; South Australia, £1,035,631; Western Australia, £736,432; and Tasmania, £500,754; a total of £10,924,323.

From 1st July, 1929, the Commonwealth Government will assume all liability for so much of the Public Debt of the States bearing interest at the rate of 5 per cent. per annum as is equivalent to the agreed value of the transferred properties shown above. The Commonwealth Government will receive the freehold or equivalent title to the transferred properties consisting of land or interests in land and all liability of the Commonwealth to the State in respect of transferred properties is extinguished from that date.

5. War Loan from the Imperial Government.—On the outbreak of the European war in 1914, the Commonwealth Government obtained a loan from the Imperial Government for the purpose of financing the prospective large military expenditure. At first, the arrangement was that the Imperial Government should advance the sum of £18,000,000. Subsequently further loans totalling £31,500,000 were negotiated. In addition to this capital indebtedness of £49,500,000, a further sum of £42,696,500 was due to the British Government for the maintenance of Australian troops.

Early in 1921 an arrangement was concluded with the Imperial Government, by means of which almost the entire debt (upwards of £92,000,000) was consolidated. The Commonwealth Government undertook to extinguish the debt in about 35 years by annual payments representing 6 per cent. on the original debt, providing for interest at £4 18s. 4d. per cent., and a sinking fund of £1 1s. 8d. per cent. The amount outstanding on 30th June, 1929, was £82,790,481.

6. Flotation of War Loans in Australia.—In addition to the advances from the Imperial Government, the Commonwealth Government raised large amounts of money in Australia. Full details of the seven War Loans are given in Official Year Book No. 14.

7. Flotation of Loans, 1928–29.—During the year 1928–29, the loans raised by the Commonwealth (including “Over the Counter” sales and conversions at State Treasuries) totalled £76,797,721, of which £32,093,714 was for Commonwealth purposes and £44,704,007 for the States.

COMMONWEALTH LOANS FLOATED, 1928–29.

For whom Raised.	Amount Raised.			Rate of Interest.	Date of Maturity.	Price.
	London.	Australia.	Total.			
	£	£	£	%		s
Conversion and Redemption..	..	18,685,850	18,685,850	5½	15.9.35	98½
	..	3,723,860	3,723,860		15.9.42	
Commonwealth .. £5,287,674	7,000,000	..	7,000,000	5	1.7.45–75	98
States .. £1,712,326						
Commonwealth .. £3,000,000	8,000,000	..	8,000,000	5	1.7.45–75	98
States .. £5,000,000						
States .. ..	..	7,637,430	7,637,430	5½	15.7.39	100
Conversion .. ..	..	1,396,330	1,396,330	5½	15.7.39	100
States (a) .. ..	..	30,354,251	30,354,251	(b)	(b)	98½–100
Total	15,000,000	61,797,721	76,797,721	..	..	..

(a) “Over the Counter” Sales and Conversions at State Treasuries. (b) Various.

8. **Commonwealth Public Debt.**—(i) *Total Debt.* Separate consideration has already been given to the items composing the Public Debt. The table appended shows the debt of the Commonwealth (including loans raised for the States) at 30th June, 1929.

COMMONWEALTH PUBLIC DEBT AT 30th JUNE, 1929.

Particulars.	Payable in London.	Payable in New York.	Payable in Australia.	Total.
	£	£	£	£
War Debt (a)—				
Stock, Bonds, etc.	11,020,160	..	229,605,172	240,625,332
Indebtedness to United Kingdom ..	82,790,481	..	..	82,790,481
Total	93,810,641	..	229,605,172	323,415,813
Deduct advances to States for Soldier Land Settlement .. ..	..	..	35,598,068	35,598,068
Total War Debt	93,810,641	..	194,007,104	287,817,745
Works and other Purposes—				
Stock, Bonds, etc.	47,582,146	17,155,718	11,996,496	76,734,360
Balance of Loans taken over from South Australia—				
Northern Territory	329,100	..	783,874	1,112,974
Port Augusta Railway	908,686	..	12,360	921,046
Transferred Properties .. ..	..	..	11,035,447	11,035,447
Total Works and other Purposes ..	48,819,932	17,155,718	23,828,177	89,803,827
Total Commonwealth Purposes ..	142,630,573	17,155,718	217,835,281	377,621,572
On Account of States—				
Advances for Soldier Land Settlement ..	..	..	35,598,068	35,598,068
Stock, Bonds, etc.	42,773,694	16,143,573	69,849,204	128,766,471
Total on Account of States ..	42,773,694	16,143,573	105,447,272	164,364,539
Grand Total	185,404,267	33,299,291	323,282,553	541,986,111

PER HEAD OF POPULATION.(b)

	£ s. d.	£ s. d.	£ s. d.	£ s. d.
War	14 14 5	..	30 8 10	45 3 3
Works and other Purposes	7 13 2	2 13 10	3 14 9	14 1 9
Total Commonwealth Purposes ..	22 7 7	2 13 10	34 3 7	59 5 0
On Account of States	6 14 6	2 10 9	16 11 7	25 16 10
Grand Total	29 1 10	5 4 6	50 14 6	85 0 10

(a) Less Sinking Fund Contributions and Accumulations. (b) Based on population at 30th June, 1929. Debt on account of States has been calculated on the aggregate population of the six States at that date.

(ii) *Place of Flotation.* The loans taken over from South Australia, which constituted the first portion of the Federal Public Debt, included both London and Australian securities. The presence in the Treasury of a large holding of gold, and the moderate rate of interest

ruling on gilt-edged securities, made the conditions in 1911 and for some little time afterwards very favourable for the flotation of local loans. London securities were redeemed as they fell due, and replaced by the 3½ per cent. stock of the Loan Fund. Consequently, up to 1914 the amount of the securities repayable in London fell steadily, and the amount repayable in Australia rose rapidly. In 1915 the military loan from the Imperial Government caused a sharp rise in the amount of the securities repayable in London, which was maintained in the two following years. This was, however, more than offset by the flotation of the local war loans. In 1925–26 a loan of £15,411,487 was raised in New York. The appended table gives particulars of Commonwealth loans outstanding in each of the last five years which had been floated overseas and in Australia respectively. The value of transferred properties has been included under debt floated in Australia.

COMMONWEALTH PUBLIC DEBT.—PLACE OF FLOTATION, 1925 TO 1929.

Place of Flotation, etc.	At 30th June—				
	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£
Overseas (a)—					
Commonwealth Purposes ..	128,329,562	146,471,933	142,552,950	153,507,123	159,786,291
On Account of States ..	17,787,461	24,823,053	25,665,839	52,554,613	58,917,267
Total	146,117,023	171,294,986	168,218,789	206,061,736	218,703,558
Percentage of Total Debt %	33.91	37.36	36.48	41.70	40.35
Australia—					
Commonwealth Purposes ..	233,743,205	228,466,781	224,058,555	219,276,966	217,835,281
On Account of States ..	51,087,834	58,681,584	68,790,398	68,790,398	105,447,272
Total	284,831,039	287,148,365	292,848,953	288,067,364	323,282,553
Percentage of Total Debt %	66.09	62.64	63.52	58.30	59.65
Total—					
Commonwealth Purposes ..	362,072,767	374,938,714	366,611,505	372,784,089	377,621,572
On Account of States ..	68,875,295	83,504,637	94,456,237	121,345,011	164,364,539
Grand Total ..	430,948,062	458,443,351	461,067,742	494,129,100	541,986,111

(a) Including, for 1925–26, £15,411,487; for 1926–27, £15,365,663; for 1927–28, £33,563,752, and for 1928–29, £33,299,291, payable in New York.

(iii) *Amount of Debts at Various Rates of Interest.*—When the first debt was taken over from South Australia, it consisted mainly of securities bearing interest varying from 3 per cent. to 4 per cent., the average rate of interest for the first year being £3 12s. 4d. For the first three years the increase in the debt was due almost entirely to the expansion of the 3½ per cent. stock of the Loan Fund, consequently the average rate of interest fell steadily, until on 30th June, 1914, it stood at £3 11s. 10d. Then came the loans for military and repatriation purposes, and the fall in the average rate was ultimately converted into a rise which steadily maintained until at 30th June, 1929, the average rate stood at £5 5s. 0d.

The accompanying table gives particulars of rates of interest of the gross Commonwealth debt, including the debt on account of the States, and the debt for Commonwealth purposes for the four financial years ended 30th June, 1929:—

COMMONWEALTH PUBLIC DEBT.—RATES OF INTEREST, 1926 TO 1929.

At 30th June—

Rates of Interest.	1926.	1927.	1928.	1929.	
				Gross Debt.	For C'wealth Purposes.
%	£	£	£	£	£
3	33,261	..	..	55,996	33,262
3½	14,998,518	3,933,389	4,044,513	4,416,799	4,416,799
£3/12/3	576,288	485,949	476,207	..	..
3¾	758,495	758,495	753,850	803,023	803,023
3½ .. ..	..	..	..	..	..
4	4,484,361	5,785,118	4,453,778	4,458,778	4,453,778
4½	46,600,260	29,783,480	10,274,324	10,497,487	4,335,436
4¾ .. ..	..	375,000	..	..	..
4½	6,000,000	6,000,000	6,000,000	6,150,000	6,000,000
£4/18/4	86,865,883	85,572,848	84,215,449	82,790,481	82,790,481
5	103,243,689	112,362,689	131,332,055	134,558,634	71,470,563
5½ .. ..	..	..	..	470,000	..
5½	8,614,820	49,386,660	86,136,870	135,645,594	91,573,959
5½	80,109,440	67,333,780	67,304,010	67,086,580	67,086,580
5½	105,890,122	98,920,556	98,915,628	94,827,638	80,030,658
6	268,214	369,778	222,416	225,101	225,101
Overdue .. ..	..	..	..	..	(a)35,598,068
Total	458,443,351	461,067,742	494,129,100	541,986,111	377,621,572
Average rate of interest	£5/3/11	£5/4/8	£5/5/2	£5/5/0	£5/3/9

(a) Deduct Loans to States for Soldier Land Settlement.

(iv) *Amount of Interest Payable.* A table is appended showing the amounts payable as interest on the total Commonwealth Public Debt (including amounts raised on behalf of the several States) at 30th June in the years 1925 to 1929 inclusive. The rapid increase is due not only to the great expansion of the Loan Fund, but also to the high rate of interest on recent loans.

COMMONWEALTH PUBLIC DEBT.—INTEREST PAYABLE OVERSEAS AND IN AUSTRALIA, AT 30th JUNE, 1925 TO 1929.

Particulars.	Year ended 30th June—				
	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£
For Commonwealth Purposes—					
Overseas	6,424,962	7,350,154	7,145,771	7,681,795	8,018,486
Australia	11,179,861	11,565,213	11,585,392	11,605,981	11,553,191
Total	17,604,823	18,915,367	18,731,163	19,287,776	19,571,677
On account of the States—					
Overseas	984,425	1,370,182	1,311,752	2,619,172	2,916,438
Australia	3,144,104	3,542,023	4,072,616	4,072,613	5,964,496
Total	4,128,529	4,912,205	5,384,368	6,691,785	8,880,934
Grand Total—					
Overseas	7,409,387	8,720,336	8,457,523	10,300,967	10,934,924
Australia	14,323,965	15,107,236	15,658,008	15,678,594	17,517,687
Grand Total	21,733,352	23,827,572	24,115,531	25,979,561	28,452,611

(v) *Dates of Maturity.* The dates of maturity of the several portions of the Commonwealth debt are shown hereunder. The Commonwealth Government has refrained from issuing interminable stock, and in respect of only a small proportion of the debt no definite date of maturity had been assigned on 30th June, 1929. While the actual dates of maturity extend from 1929 to 1975, or a period of 46 years, the average period till maturity of the gross debt is only 14.10 years.

**COMMONWEALTH PUBLIC DEBT.—DUE DATES OF AMOUNTS OUTSTANDING ON
30th JUNE, 1929. (a)**

Year of Maturity.	Debt for Commonwealth purposes.	Debt on Account of States.	Gross Debt.
	£	£	£
1929	3,797,000	315,000	4,112,000
1930	61,791,400	11,803,124	73,594,524
1931	27,070,790	2,258,740	29,329,530
1933	40,556,668	10,748,000	51,304,668
1934	3,830,447	8,237,500	12,067,947
1935	19,569,151	11,515,370	31,084,521
1936	13,742,167	1,239,090	14,981,257
1937	814	..	814
1938	10,230,895	1,748,000	11,978,895
1939	1,558,255	10,302,824	11,861,079
1941	43,476,660	4,470,370	47,947,030
1942	4,039,940	2,622,190	6,662,130
1943	14,824,770	3,633,260	18,458,030
1945	17,354,817	5,029,183	22,384,000
1948	9,577,370	260,500	9,837,870
1953 .. .. .	..	178,500	178,500
1954 .. .. .	..	444,000	444,000
1955	10,230,186	4,968,006	15,198,192
1956	4,335,436	5,885,051	10,220,487
1957	2,580,095	5,290,517	7,880,612
1960	6,000,000	..	6,000,000
1972	3,764,716	..	3,764,716
1975	20,247,489	37,744,511	57,992,000
Indefinite	27,216	..	27,216
Annual Repayments ..	82,790,481	..	82,790,481
Transferred Properties ..	11,035,447	..	11,035,447
Miscellaneous	777,430	72,735	850,165
Loans to States for Soldier Land Settlement ..	— 35,598,068	+ 35,598,068	..
Total	377,621,572	164,364,539	541,986,111
Average period to maturity —years	11.29	21.04	14.10

(a) Those loans in the case of which the Government has the option of redemption during a specified period have been in each case classified according to the latest date of maturity.

9. *Flotations on behalf of States.*—Act No. 17 of 1916 authorized the Treasurer to borrow £8,940,000 in the United Kingdom, and Act No. 16 of 1917 to raise £8,000,000, also to lend the amount to the several States, other than New South Wales, and, pending the borrowing of the money, to advance the amounts set forth in the Acts out of loans made by the Government of the United Kingdom to the Commonwealth. In pursuance of these Acts, £16,907,287 was distributed to the States up to 30th June, 1924. Other loans have since been floated in London, New York and Australia. The totals so raised have been distributed as shown in the following table :—

COMMONWEALTH LOANS RAISED ON BEHALF OF STATES AT 30th JUNE, 1929.

State.	Amount Floated in—			Total.
	London.	New York.	Australia.	
	£	£	£	£
New South Wales	7,614,460	3,922,921	12,814,961	24,352,342
Victoria	5,833,571	4,658,461	27,194,215	37,686,247
Queensland	10,116,564	3,436,062	8,007,302	21,559,928
South Australia	8,522,717	1,789,768	16,933,330	27,245,815
Western Australia	9,337,603	2,100,052	4,259,956	15,697,611
Tasmania	1,348,779	236,309	1,299,740	2,884,828
Total	42,773,694	16,143,573	70,509,504	129,426,771

In addition to these amounts, the Commonwealth Government has made other advances to the States for various purposes. The total amounts, including the sums shown in the above table, are as follows, the figures representing sums outstanding at 30th June, 1929 :—

ADVANCES TO STATES OUTSTANDING ON 30th JUNE, 1929.

Advances for—	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
	£	£	£	£	£	£	£
Settling returned soldiers	9,805,983	11,794,075	2,700,583	2,833,005	5,431,202	2,129,563	34,694,411
Providing employment	..	86,702	400,000	28,796	..	..	515,498
Public Works, Redemption, etc. ..	23,029,882	36,564,419	21,097,966	26,510,382	11,607,799	3,503,509	122,313,957
Grafton-South Brisbane Railway	1,172,140	..	459,888	..	..	..	1,632,028
Silos for wheat storage	250,000	..	..	..	..	..	250,000
Development and Migration	150,320	1,121,828	2,076	785,432	4,489,812	..	6,499,468
Other purposes .. ..	..	9,500	278,158	..	202,315	18,750	508,723
Total	34,408,325	49,576,524	24,938,671	30,107,615	21,731,128	5,651,822	166,414,085

10. Sinking Funds.—Particulars relating to the creation of Sinking Funds are included in previous issues.

The old Sinking Funds were merged in the National Debt Sinking Fund on 11th August, 1923. Particulars of receipts and expenditure of the Commonwealth Account from the year 1924-25 are as follows :—

COMMONWEALTH PUBLIC DEBT.—NATIONAL DEBT SINKING FUND,
1924-25 TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Cr. Brought forward	2,059,372	4,152,992	3,192,538	1,324,897	955,726
From Consolidated Revenue	3,111,216	2,796,722	2,017,391	2,276,032	2,469,272
Repayments of Sundry Loans	16,482	33,157	18,171	9,931	260,028
Purchase Money and Repayments under War Service Homes Act	746,012	744,548	831,562	787,897	799,508
Half net Profit Commonwealth Bank	130,477	226,176	236,280	320,563	349,204
Reparation Monies	257,692	302,922	1,340,573	651,779	876,404
Interest on Investments	94,271	89,950	89,754	54,246	30,312
Contributions by States .. ..	..	..	1,218	8,927	21,013
Total	6,415,522	8,340,467	7,727,487	5,434,332	5,761,467
Dr. Redemptions	2,262,530	5,147,929	6,402,590	4,478,606	5,014,730
Carried Forward	4,152,992	3,192,538	1,324,897	955,726	746,737
Total	6,415,522	8,340,467	7,727,487	5,434,332	5,761,467

The Imperial Government loan comes in a different category from the others, since it is being liquidated by the funding arrangement described on a previous page.

Information regarding the transactions of the States' Account of the National Debt Sinking Fund is published in Finance Bulletin No. 20 issued by this Bureau.

§ 5. Cost of War and Repatriation.

In view of the importance of the subject, a further reference is here made to the cost of the war. The general policy of the Commonwealth Government has been to pay from Consolidated Revenue all recurring charges for interest, sinking fund, pensions, and other charges consequent upon the war, and part of the expense of repatriation. On the other hand, the whole direct cost of the war and the larger proportion of the cost of repatriation have been paid from loans. The total cost from both sources to the 30th June, 1929, is set out in the following table :—

COST OF WAR SERVICES TO 30th JUNE, 1929.

Year.	From Consolidated Revenue (a).		From War Loan Fund (b).	Total.
	War and Repatriation Services, including War Pensions.	Interest and Sinking Fund.		
	£	£	£	£
1914-15	896,190	115,145	14,100,000	15,111,335
1915-16	1,718,887	2,059,491	37,423,568	41,201,946
1916-17	2,439,271	5,988,058	53,114,237	61,541,566
1917-18	4,049,955	7,813,296	55,028,180	66,891,431
1918-19	9,966,927	11,288,174	59,547,080	80,802,181
1919-20	10,792,793	13,958,938	43,294,764	68,046,495
1920-21	13,672,345	19,613,888	24,148,501	57,434,734
1921-22	10,261,471	21,075,693	7,576,977	38,914,141
1922-23	9,298,560	20,801,912	1,762,694	31,863,166
1923-24	8,161,230	20,608,876	691,247	29,461,353
1924-25	8,232,656	20,250,105	Cr. 32,051	28,450,710
1925-26	8,473,717	20,698,133	Cr. 7,613	29,164,237
1926-27	8,814,001	20,495,082	23,938	29,333,021
1927-28	8,788,037	20,218,175	Cr. 23,741	28,982,471
1928-29	9,026,749	21,071,002	Cr. 12,972	30,084,779
Discounts and Flotation Expenses on Loans .. .. .	..	..	5,812,368	5,812,368
Indebtedness to the Government of the United Kingdom for payments made, services rendered and goods supplied during the war .. .. .	..	..	43,398,098	43,398,098
War Gratuities paid in cash	452,295	..	27,031,377	27,483,672
Total to 30th June, 1929	115,045,084	226,055,968	372,876,652	713,977,704
	£341,101,052			

(a) Including the amounts spent from Trust Fund War Pensions Account.
 (b) Exclusive of Expenditure on War Service Homes.

§ 6. Old-age and Invalid Pensions.

1. **General.**—In previous issues of this work an account was given of the introduction of the old-age pension system in Australia, together with a detailed description of the Commonwealth Invalid and Old-age Pensions Act of 1908 which became operative on 1st July, 1909. (See Year Books, Nos. 3 to 8.) An amendment of this Act, assented to on 30th September, 1916, made a very important alteration. Section 24 originally enacted that the pension "shall not exceed the rate of twenty-six pounds per annum in

any event, nor shall it be at such a rate as will make the pensioner's income, together with pension, exceed fifty-two pounds per annum." It was amended (a) by omitting the words "twenty-six pounds," and inserting in their stead the words "thirty-two pounds ten shillings", and (b) by omitting the words "fifty-two pounds" and inserting in their stead the words "fifty-eight pounds ten shillings." Section 26 originally enacted that if an applicant for an old-age pension was in receipt of board or lodging, the actual or estimated value or cost thereof should be counted as income, to an extent not exceeding five shillings per week. This was amended by omitting the words "five shillings" and inserting in their stead the words "seven shillings and sixpence."

In regard to invalid pensions, the applicant must satisfy the Department that her or his disability was contracted in Australia and is both total and permanent.

In 1919 the Act was again amended, and the rate of pension raised to £39 per annum and the maximum amount allowable to £65 per annum. The estimated value of board and lodging was raised to 10s. per week, while a further amending Act in 1923 raised the rate of pension to £45 10s. per annum and the maximum allowable to £78 per annum.

In 1925 an amending Act increased the rate of pension to £52 per annum and the maximum amount allowable to £84 10s. per annum from 1st October, 1925.

In 1920 special provision was made for a permanently blind person, by which the amount of pension may be at such a rate (not exceeding £52) per annum, as will make his income, together with the pension, equal to an amount not exceeding £221 per annum or such other amount as is declared to be a basic wage.

2. *Old-age Pensions.*—(i) *Number in force.* At 30th June, 1928, there were 139,367 Old-age pensions in force. During 1928–29, 18,712 pension claims were granted and 12,686 pensions were cancelled, a net increase of 6,026 pensions for the year—bringing the total pensions in existence at 30th June, 1929, to 145,393.

(ii) *Sexes of Pensioners.* Of the 145,393 persons in receipt of pensions at 30th June, 1929, 60,337 (or 41 per cent.) were males, and 85,056 (or 59 per cent.) were females. Details for the several States are as follows:—

OLD-AGE PENSIONS.—SEXES OF PENSIONERS, 1929.

State.	Males.	Females.	Total.	(a) Masculinity.
New South Wales	23,401	31,183	54,584	—14.26
Victoria	16,713	26,082	42,795	—21.90
Queensland	8,636	10,659	19,295	—10.48
South Australia	4,894	8,222	13,116	—25.38
Western Australia	3,651	4,605	8,256	—11.56
Tasmania	3,042	4,305	7,347	—17.19
Total	60,337	85,056	145,393	—17.00

(a) Excess of males over females in each 100 of total pensioners.

(iii) *Ages and Conjugal Condition of Pensioners.* The recorded ages of the 18,712 persons, 9,455 males and 9,257 females, to whom pensions were granted during the year 1928–29 varied considerably, ranging from 2,902 at age 60 to 3 at age 97. The conjugal condition of these pensioners was as follows:—Males—single, 2,205; married, 5,438; and widowed, 1,812. Females—single, 1,062; married, 4,861; and widowed, 3,334.

3. *Invalid Pensions.*—(i) *Number in force, 1929.* During the year 1928–29, the number of invalid pensioners increased from 55,517 to 59,148, an increase of 3,631 pensions. Altogether 8,599 claims were allowed and 4,968 pensions were cancelled.

(ii) *Sexes of Pensioners.* Of the 59,148 persons in receipt of invalid pensions on 30th June, 1929, 26,184, or 44 per cent., were males, and 32,964, or 56 per cent., were females. Details for the several States are as follows:—

INVALID PENSIONS.—SEXES OF PENSIONERS, 1929.

State.	Males.	Females.	Total.	(a) Masculinity.
New South Wales	10,486	13,480	23,966	—12.49
Victoria	7,779	9,778	17,557	—11.39
Queensland	4,112	4,441	8,553	—3.85
South Australia	1,362	2,296	3,658	—25.54
Western Australia	1,418	1,611	3,029	—6.37
Tasmania	1,027	1,358	2,385	—13.88
Total	26,184	32,964	59,148	—11.46

(a) Excess of males over females in each 100 of total pensioners.

(iii) *Ages and Conjugal Condition of Pensioners, 1929.* The recorded ages of the 8,599 persons (4,390 males and 4,209 females) to whom invalid pensions were granted during the period under review varied from 16 to 85.

The conjugal condition of persons to whom invalid pensions were granted during the year was as follows:—Males—single, 1,931; married, 2,180; and widowed, 279. Females—single, 1,855; married, 1,265; and widowed, 1,089.

4. *Cost of Administration.*—Under the State régime the cost of administration differed considerably in the several States, and for 1908–9 represented in New South Wales 4.17 per cent. of the amount actually paid in pensions. In Victoria for the same year the corresponding percentage was 0.70. During the year 1928–29 the total cost to the Commonwealth of administering the Old-age and Invalid Pensions Department was £86,605, or about 0.85 per cent. of the amount actually paid in pensions.

The actual sum disbursed in Old-age and Invalid Pensions in the financial year 1928–29, apart from the cost of administration and inclusive of the amount paid to asylums for the maintenance of pensioners, was £10,124,239.

5. *Summary.*—The following table gives detailed statistical information concerning the working of the Act for the last five years:—

OLD-AGE AND INVALID PENSIONS.—SUMMARY, AUSTRALIA, 1925 TO 1929.

Year ended 30th June—	Number of Pensioners.				Amount Paid in Pensions.	Total Payment to Pensioners and to Asylums for Maintenance of Pensioners.	Cost of Administration.	Cost of Administration per £100 paid to Pensioners and Asylums.	Average Fortnightly Pension on last day of Financial Year.
	Old-age.		Invalid.	Total.					
	No.	Est. No. per 1,000 of persons eligible on age qualification. (a)							
			No.	No.	£	£	£	£ s. d.	s. d.
1925	117,516	339	44,840	162,356	6,896,401	6,992,905	94,486	1 7 0	33 8
1926	126,918	359	48,803	175,721	8,146,636	8,252,387	99,620	1 4 2	38 7
1927	133,234	369	52,399	185,633	9,034,938	9,144,589	116,008	1 5 4	38 6
1928	139,367	379	55,517	194,884	9,681,837	9,790,346	118,641	1 4 3	38 5
1929	145,393	390	59,148	204,541	9,991,299	10,124,239	86,605	0 17 1	38 5

(a) Estimated number of old-age pensioners per 1,000 of the aggregate of males aged 65 and over and females aged 60 and over.

§ 7. Maternity Allowance.

During the session of 1912 the Federal Parliament passed an Act (assented to on 10th October, 1912) providing for the payment of maternity allowances. The scope and main provisions of the Act are given in Year Book No. 14, p. 1047. The most important conditions are that the sum of five pounds is payable in the case of each confinement

resulting in the birth of a viable child whether such child was born alive or dead. The mother must be a native of the Commonwealth, or intend to settle permanently therein. No payment is made in the case of an aboriginal or an Asiatic.

The following table gives a summary in connexion with the working of the Maternity Allowance Act for the years 1925 to 1929 :—

MATERNITY ALLOWANCE.—SUMMARY, 1925 TO 1929.

Year.	Claims Paid.	Claims Rejected.	Amount Paid.	Cost of Administration.	Cost per £100 of allowance paid.
			£	£	£ s. d.
1924-25 ..	137,641	455	688,205	16,425	2 7 9
1925-26 ..	136,171	517	680,855	15,702	2 6 1
1926-27 ..	132,056	1,122	660,280	16,181	2 9 0
1927-28 ..	135,784	1,261	678,920	15,489	2 5 8
1928-29 ..	132,304	901	661,520	16,626	2 10 3
Aggregate—					
1912-13 to					
1928-29 ..	2,220,728	10,717	11,103,638	234,847	2 2 4

§ 8. War Pensions.

1. General.—An Act for the provision of war pensions was passed in 1914 and amended in 1915 and 1916. Its scope can be determined by the following extract from section 3. "Upon the death or incapacity of any member of the forces whose death or incapacity results, or has resulted, from his employment in connexion with warlike operations in which His Majesty is, or has since the commencement of the present state of war been engaged, the Commonwealth shall, subject to this Act, be liable to pay to the member or his dependants, or both, as the case may be, pensions in accordance with this Act."

2. Number of Pensioners and Expenditure on War Pensions.—The following table shows the number of pensioners and the places where payments were made at the 30th June, 1929 :—

WAR PENSIONS.—NUMBER OF PENSIONERS, 1929.

Where Paid.	Incapacitated Members of the Forces.	Dependents of—		Total.	Expenditure.
		Deceased Members.	Incapacitated Members.		
					£
New South Wales ..	25,153	9,797	52,567	87,517	2,701,384
Victoria ..	23,837	11,086	55,715	90,638	2,245,457
Queensland ..	7,935	3,222	16,816	27,973	839,007
South Australia ..	4,164	3,161	9,256	16,581	493,403
Western Australia ..	7,603	3,272	17,209	28,084	787,346
Tasmania ..	2,876	1,432	7,443	11,751	326,257
London ..	1,577	3,962	3,617	9,156	} 342,067
South Africa ..	50	34	69	153	
New Zealand ..	217	209	291	717	
Other Overseas ..	24	7	30	61	
Total ..	73,436	36,182	163,013	272,631	7,734,921
Payments made in Australia in respect of other countries less amounts received from other countries ..	..	..	..	..	20,853
Grand Total, Expenditure	..	..	..	..	7,755,774

3. Cost of Administration.—The cost of administration in 1928–29 after allowing for the amount recoverable from the Government of the United Kingdom on account of administrative cost of British Pensions was £140,128, or 1.8 per cent. on the total amount paid in pensions.

§ 9. Commonwealth Public Service Superannuation Fund.

This Fund, which was inaugurated on the 20th November, 1922, is maintained by contributions of officers of Parliament, of employees of the Commonwealth Public Service and the Defence Department, and by payments from the Consolidated Revenue—the latter being made when the officers retire on pension. Full particulars as to the benefits, etc., will be found in Official Year Book No. 18, page 383.

The number of contributors to the fund at 30th June, 1929, was 31,279, viz., 27,982 males and 3,297 females, and the average pension contributed for was £117 lls. per annum.

During 1928–29, the receipts of the Fund amounted to £537,310, of which officers' contributions represented £420,468. The expenditure from the fund for the year totalled £539,130, of which £475,147 was invested, bringing the total funds invested to £2,412,741 (at cost). The average rate of interest earned on investments at 30th June, 1929, was 5.483 per cent.

Pensions on the 30th June, 1929, numbered 2,749 with an annual liability of £218,384, of which £178,888 represents the share payable from the Consolidated Revenue.

B. STATE FINANCE

§ 1. General.

1. Functions of State Governments.—In comparing the financial returns of the States allowance must be made for the various functions discharged by the respective Governments, and for local conditions in each case. Direct comparisons of expenditure are difficult, owing to the fact that functions which in one State are assumed by the Central Government are in another relegated to local governing bodies, and that costly developmental work may, under certain conditions, be not only economically justifiable but may be essential to progress, while parsimonious expenditure may be an economic blunder. A large expenditure may, therefore, be an indication either of gross extravagance and bad economy on the one hand, or of healthy progress and good economy on the other. Similarly, as regards revenue, imposts which in some States are levied by the Central Government, are in others dealt with locally. Care, therefore, is needed in instituting comparisons, and the particulars contained in this chapter should be read in connexion with those contained in the chapter dealing with Local Government. In many respects moreover, the budgets of the Australian Governments differ materially from those of most European countries, owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which in other countries are often left to private enterprise.

2. Accounts of State Governments.—The various financial transactions of the States are in each case concerned with one or other of three Funds—the “Consolidated Revenue Funds,” the “Trust Funds,” and the “Loan Funds.” All revenue (except certain taxation items paid into special funds) collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an Annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. From 1st July, 1928, the accounts of the Railway and Tramway services, Sydney Harbour Trust, and certain water supply services were separated from the Consolidated Revenue Fund of New South Wales. To preserve the comparability of the State Finance statistics, information in respect of the above services has been included in the tabular statements in this section. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings' banks funds, sinking funds, insurance companies' deposits, etc. The Loan Funds are debited with all loan moneys raised by the State, and credited with the expenditure therefrom on public works or other purposes.

3. *Inter-relation of Commonwealth and State Finance.*—In regard to the inter-relation of Commonwealth and State Finances, a statement in some detail, covering the period from the inception of Federation to the passing of the *Financial Agreement Act 1928*, was published in preceding issues.

§ 2. State Consolidated Revenue Funds.

Division I.—Revenue.

1. *General.*—The principal sources of State revenue are :—

- (a) Taxation; (b) The public works and services controlled by the State Governments; (c) Sale of and rental from Crown lands; (d) The Commonwealth subsidy; and (e) Miscellaneous sources, comprising fines, fees, interest, etc.

In regard to item (b) attention is directed to the statement (see B. § 1 (2) *ante*) appertaining to the New South Wales accounts.

Of these sources, that yielding the largest revenue for the States as a whole is the group of Public Works and Services, the principal contributor being the Government Railways and Tramways. Next in magnitude comes Taxation, followed in order by the Commonwealth Subsidy and Land Revenue.

2. *Revenue Received.*—The following table furnishes particulars of the total amounts and the amounts per head of consolidated revenue received by the several States during the five years 1924–25 to 1928–29 :—

STATE CONSOLIDATED REVENUE, 1924–25 TO 1928–29.

Year.	N.S.W. (a)	Victoria. (a)	Q'land.	S. Aust.	W. Aust. (b)	Tasmania.	All States.
TOTAL COLLECTIONS.							
	£	£	£	£	£	£	£
1924–25	39,529,048	24,304,887	14,897,256	9,733,038	8,381,446	2,762,013	99,607,688
1925–26	41,569,166	25,269,756	15,599,718	10,474,094	8,808,166	2,726,482	101,447,382
1926–27	47,060,753	27,128,700	16,147,787	10,784,897	9,750,833	3,040,220	113,913,190
1927–28	47,997,372	27,357,917	16,718,070	11,346,903	9,807,949	2,962,687	116,190,898
1928–29	51,241,737	28,156,034	16,736,188	10,840,914	9,947,951	2,766,434	119,689,258
PER HEAD OF POPULATION.							
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1924–25	17 10 8	14 13 4	17 16 10	18 1 6	23 0 4	12 13 5	16 19 7
1925–26	18 1 9	15 0 1	18 2 3	18 19 9	23 13 4	12 11 3	17 9 1
1926–27	20 0 11	15 16 11	18 6 1	19 0 10	25 14 11	14 3 2	18 13 5
1927–28	19 19 11	15 14 3	18 11 10	19 14 2	25 0 0	13 14 6	18 13 4
1928–29	20 19 1	15 19 9	18 5 2	18 14 3	24 10 2	12 15 6	18 18 6

(a) Includes certain moneys not paid into Consolidated Revenue Fund.

(b) Excludes Motor Taxation paid into a Special Fund.

During the four years from 30th June, 1925, to 30th June, 1929, the aggregate revenue of the States increased by no less a sum than £20,081,570, or about 20 per cent. Increases were in evidence in all the States, the largest being that of £11,712,689 in New South Wales.

There has been a marked increase in the collections per head in all the States. Western Australia throughout the period has occupied the premier position, and in 1928–29 the revenue per head in that State exceeded the average for Australia by about 27 per cent. In Tasmania, however, the revenue per head averaged about 68 per cent. only of the average for Australia.

3. Sources of Revenue.—(i) *General*.—Classifying the revenue of the several States in the manner indicated in 1 *ante*, particulars for the year 1928-29 are as follows:—

STATE CONSOLIDATED REVENUE.—SOURCES, 1928-29.

Particulars.	N.S.W. (a)	Victoria. (a).	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL REVENUE.							
Taxation (c) ..	£ 13,378,734	£ 7,154,131	£ 4,671,652	£ 3,191,997	£ 1,370,039	£ 1,111,533	£ 30,878,086
Public works and services ..	30,584,219	15,584,900	8,142,578	5,724,368	5,528,283	954,737	66,519,085
Land ..	2,244,571	459,185	1,490,341	299,871	514,482	69,341	5,086,791
Commonwealth subsidy ..	2,856,479	2,101,703	1,060,234	686,363	b 763,578	b 436,351	7,954,708
Miscellaneous ..	2,177,734	2,856,115	1,362,383	938,315	1,771,569	144,472	9,250,588
Total ..	51,241,737	28,156,034	16,736,188	10,840,914	9,947,951	2,766,434	119,689,258

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation (c) ..	5 9 5	4 1 3	5 1 11	5 10 2	3 7 6	5 2 8	4 17 8
Public works and services ..	12 10 2	8 17 0	8 17 8	9 17 8	13 12 5	4 8 2	10 10 4
Land ..	0 13 4	0 5 3	1 12 8	0 10 4	1 5 4	0 6 5	0 16 1
Commonwealth subsidy ..	1 3 4	1 3 10	1 3 2	1 3 8	b 1 17 7	b 2 4 11	1 5 2
Miscellaneous ..	0 17 10	1 12 5	1 9 9	1 12 5	4 7 4	0 18 4	1 9 3
Total ..	20 19 1	15 19 9	18 5 2	18 14 3	24 10 2	12 15 6	18 18 6

(a) Includes certain moneys not paid into Consolidated Revenue Fund. (b) Including special grant.
(c) In some States certain Taxation collections are not paid into Consolidated Revenue Fund. For total collections see next page.

In connexion with the item Public Works and Services, it should be borne in mind that services performed by the Government in one State may, in another, be carried out by a Board or Trust. For instance, in New South Wales and Western Australia the tramway systems are controlled by the Government, while in the other States ownership is largely vested in Trusts or private companies. Harbour and river services and water supply and sewerage are also controlled in some cases by the State and in others by Trusts.

The magnitude of the revenue per head from public works and services in the case of Western Australia is mainly due to the fact that the number of miles of railway in that State is large compared with the population, while the revenue earning power of the railways is also high. In New South Wales and Western Australia the revenue from tramways is also included.

(ii) *Revenue from Taxation*.—(a) *General*. Owing to varying practices obtaining in the several States in regard to the method of treating Motor Taxation in the respective Treasurers' Statements of Accounts, particulars of State Taxation collections have not always been directly comparable. The following table shows for the year 1928-29 particulars of all state taxation collections irrespective of whether such moneys have been paid into the Consolidated Revenue Funds or not. For this reason, the particulars hereunder are inconsistent with those stated in the tables relating to the Consolidated Revenue Funds, but represent a comprehensive statement of all taxation collections in each State. In this and the succeeding statements of taxation, the collections have been grouped according to the nature of the tax rather than the method of collection. For example, stamp duties on betting tickets and bookmakers' licences have been included under "Racing Taxation" instead of under "Stamp duties" and "Licences," respectively.

STATE REVENUE FROM TAXATION, 1928-29.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Probate and succession duties	1,816,927	1,079,840	524,135	329,924	82,469	74,612	3,908,107
Other stamp duties ..	1,586,776	1,017,908	575,809	469,861	291,400	62,623	4,004,377
Land Tax ..	2,870	560,765	569,551	452,994	196,301	99,384	1,881,865
Income Tax ..	7,343,049	2,881,917	2,758,514	1,735,922	664,836	584,565	15,948,803
Liquor Licences ..	491,257	365,941	96,880	34,679	82,802	21,545	1,093,104
Other Licences ..	42,910	36,494	32,846	34,008	6,487	18,004	170,749
Racing Taxation ..	557,347	145,532	93,125	60,776	67,229	158,711	1,082,720
Motor Taxation ..	1,710,453	1,065,734	477,310	623,586	265,059	80,290	4,222,438
Other Taxation ..	..	..	..	26,243	85,250	11,593	123,086
Total ..	13,551,589	7,154,131	5,128,170	3,767,993	1,721,833	1,111,533	32,435,249

(a) Includes Dividend Tax.

Prior to Federation, duties of Customs and Excise constituted the principal source of revenue from taxation. At present, the most productive State tax is the income tax, imposed in all the States, and representing for 1928-29, 49 per cent. of the total taxation revenue. For 1928-29, motor tax occupied second place. In addition to these, a State land tax and licence fees of various kinds are collected in all the States, while a dividend tax is levied in Western Australia.

The total amounts and the amounts per head raised from all sources of taxation by the several State Governments, including amounts not paid into the Consolidated Revenue Fund, during the five years 1924-25 to 1928-29 are given in the following table :—

STATE REVENUE FROM TAXATION, 1924-25 TO 1928-29.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
TOTAL.							
	£	£	£	£	£	£	£
1924-25	8,731,513	5,238,420	4,055,617	2,290,754	1,295,504	1,306,361	22,918,169
1925-26	9,848,072	5,821,034	4,294,156	2,714,185	1,589,898	1,239,967	25,507,312
1926-27	12,698,642	6,411,936	4,759,829	2,885,266	1,485,536	1,229,823	29,471,032
1927-28	12,204,243	7,177,999	5,362,964	3,736,263	1,587,920	1,134,528	31,203,917
1928-29	13,551,589	7,154,131	5,128,170	3,767,993	1,721,833	1,111,533	32,435,249
PER HEAD OF POPULATION.							
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1924-25	3 17 5	3 3 3	4 17 3	4 5 1	3 11 2	5 19 11	3 18 2
1925-26	4 5 8	3 9 2	4 19 9	4 18 5	4 5 5	5 14 3	4 5 3
1926-27	5 8 2	3 14 11	5 7 11	5 1 11	3 18 5	5 14 7	4 16 7
1927-28	5 1 8	4 2 5	5 19 3	6 9 9	4 0 11	5 5 1	5 0 3
1928-29	5 10 10	4 1 3	5 11 11	6 10 1	4 4 10	5 2 8	5 2 7

During the period between 30th June, 1925, and 30th June, 1929, State revenue from taxation increased by about 42 per cent., the increase varying considerably in the different States and in the different sources of taxation.

Taking the States as a whole, taxation increased by £1 4s. 5d. per head during the same period, the most marked increase, £2 5s. 0d., occurring in the case of South Australia. Increases were recorded in all States except Tasmania, where the decrease represented 17s. 3d. per head of population.

(b) *Probate and Succession Duties.* Probate duties have been levied for many years in all the States, but the provisions of the Acts governing the payment of duty differ widely both in regard to the ordinary rates and those which apply to special beneficiaries. A table showing the values of the estates in which probates and letters of administration were granted is given later. (See Section E. Private Finance § 8 hereinafter.)

The duties collected for the financial years 1924-25 to 1928-29 are as follows:—

STATE PROBATE AND SUCCESSION DUTIES.—COLLECTIONS, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales ..	1,248,336	1,171,364	1,223,979	1,596,804	1,816,927
Victoria ..	802,333	940,609	1,111,876	1,117,164	1,079,840
Queensland ..	334,801	356,758	402,173	556,456	524,135
South Australia ..	225,999	269,332	242,187	327,940	329,924
Western Australia ..	68,115	84,635	66,366	81,452	82,469
Tasmania ..	88,404	74,370	151,200	99,640	74,812
Total ..	2,767,988	2,897,068	3,197,781	3,779,456	3,908,107

(c) *Other Stamp Duties.* The revenue derived from stamp duties (exclusive of probate and succession duties) for the years 1924-25 to 1928-29 is shown in the accompanying table:—

STATE STAMP DUTIES (a).—COLLECTIONS, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales ..	1,359,248	1,443,739	1,626,318	1,552,117	1,586,776
Victoria ..	965,047	1,019,250	1,061,219	1,005,957	1,017,908
Queensland ..	416,539	443,702	558,063	558,970	575,809
South Australia ..	363,572	384,000	420,932	445,517	469,861
Western Australia ..	196,363	224,311	246,089	263,871	291,400
Tasmania ..	65,496	62,858	62,700	62,267	62,623
Total ..	3,366,265	3,577,860	3,975,321	3,888,699	4,004,377

(a) Excludes Stamp Duties on betting tickets.

(d) *Land Tax.* All the States impose a Land Tax, although Queensland, the last State to fall into line, collected its first levy in 1915-16. In the other States the impost is of long standing. In New South Wales the State Land Tax is levied on the unincorporated portion of the western division of the State only.

The following table shows the amount collected by means of such taxes during the financial years 1924-25 to 1928-29:—

STATE LAND TAX.—COLLECTIONS, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales ..	2,569	2,667	2,870	2,744	2,870
Victoria ..	421,662	457,441	517,229	560,013	560,765
Queensland ..	452,481	468,020	481,937	531,940	569,551
South Australia ..	185,681	244,132	367,318	458,222	452,994
Western Australia ..	113,866	145,830	147,415	162,906	196,301
Tasmania ..	124,114	126,251	114,322	97,494	99,384
Total ..	1,300,373	1,444,341	1,631,091	1,813,319	1,881,865

(e) *Income Tax.* A tax on the incomes of persons, whether derived from personal exertion or from property, is also imposed in all the States. As might be expected, the rates, exemptions, etc., are widely divergent, but the general principles of the several Acts are similar. The Dividend Duties Act of Western Australia supplied to a certain extent the place of an income tax in that State in former years, but, with the increasing demands upon the Treasury, the levying of a direct income tax was found necessary.

The following table shows the total amount collected in the several States during the years 1924-25 to 1928-29. In the case of Western Australia the amount of dividend duty collected is included.

STATE INCOME AND DIVIDEND TAXES.—COLLECTIONS, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales ..	4,661,892	5,392,946	7,739,627	6,382,467	7,343,049
Victoria ..	2,076,656	2,238,429	2,382,991	3,035,014	2,881,917
Queensland ..	2,509,913	2,617,253	2,821,217	3,082,552	2,758,514
South Australia ..	1,268,898	1,422,993	1,359,437	1,803,829	1,735,922
Western Australia ..	716,109	832,239	619,140	648,537	644,836
Tasmania ..	781,194	721,231	599,550	574,902	584,565
Total ..	12,014,662	13,225,091	15,521,962	15,527,301	15,948,803

(f) *Motor Taxation.* Motor Taxation comprises tax and registration fees on motor vehicles; licences of motor dealers, motor drivers and motor cycle riders, and public vehicles except when controlled by local Government authorities. The following table shows the collections for the past five years:—

MOTOR TAXATION.—COLLECTIONS, 1924-25 to 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
New South Wales ..	616,362	997,195	1,247,915	1,478,986	1,710,453
Victoria ..	418,840	641,765	804,903	922,437	1,065,734
Queensland ..	151,468	203,789	275,362	403,956	477,310
South Australia ..	135,606	a 272,974	a 368,211	a 539,521	a 623,586
Western Australia ..	71,474	152,201	221,107	215,567	265,059
Tasmania ..	41,339	49,681	58,729	68,916	80,296
Total ..	1,435,089	2,317,605	2,976,227	3,629,383	4,222,438

(a) Includes motor spirit tax.

(g) *Commonwealth and State Taxation.* In the table hereunder showing the combined Commonwealth and State taxation for each of the years 1924-25 to 1928-29, as well as the amount per head of population, certain taxation collections by the State Governments which are not paid into the Consolidated Revenue Fund have been included:—

TOTAL COMMONWEALTH AND STATE TAXATION, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Commonwealth—					
Customs and Excise ..	37,192,781	39,198,878	43,552,478	41,446,730	41,058,571
Other ..	15,642,909	15,174,127	15,442,331	15,191,128	15,244,918
Total ..	52,835,690	54,373,005	58,994,809	56,637,858	56,303,489
State ..	22,918,169	25,507,312	29,471,032	31,203,917	32,435,249
Grand Total ..	75,753,859	79,880,317	88,465,841	87,841,775	88,738,738
Taxation per head—					
Commonwealth—					
Customs and Excise ..	£6/6/8	£6/10/10	£7/2/6	£6/13/0	£6/9/7
Other ..	£2/13/3	£2/10/8	£2/10/7	£2/8/9	£2/8/1
Total ..	£8/19/11	£9/1/6	£9/13/1	£9/1/9	£8/17/8
State ..	£3/18/2	£4/5/3	£4/16/7	£5/0/3	£5/2/7
Grand Total ..	£12/18/0	£13/6/4	£14/9/0	£14/1/7	£14/0/1

Whilst Customs and Excise revenue expanded during the period by £3,865,790, and other Commonwealth taxation decreased by £397,991, resulting in a net increase in Commonwealth taxation of £3,467,799, the State taxation advanced by £12,984,879; the aggregate increase being £16,452,678. The amount *per capita* of total taxation has increased by about 17 per cent. in the period under review.

(iii) *Public Works and Services.* A very large proportion of State revenues is made up of receipts from public works and services under the control of the Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while, in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all States. For the year 1928-29 the revenue from these sources was £66,519,085, or 56 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1928-29 are as follows:—

STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways	c24,873,506	a12,840,604	a7,567,281	a3,644,007	4,127,938	a 511,041	53,564,377
Harbour services ..	c1,103,598	214,080	87,083	666,919	305,931	..	2,277,611
Water supply and sewerage ..	c3,023,095	b 658,896	..	912,404	588,826	..	5,183,221
Other public services ..	1,584,020	1,871,320	488,214	601,038	505,588	443,696	5,493,876
Total ..	30,584,219	15,584,900	8,142,578	5,724,368	5,523,283	954,737	66,519,085

(a) Railways only.

(b) Water supply only.

(c) Not paid into Consolidated Revenue.

(iv) *Lands.* The revenue from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of the Consolidated Revenue Funds, and has been applied to meet ordinary expenses. Where the rentals received are for lands held for pastoral or residential purposes such application of the revenue would appear justifiable. On the other hand, where the rentals are for mineral and timber lands, and in all cases of sales of lands, the proceeding is essentially a disposal of capital to defray current expenses, and is, therefore, open to criticism. The following table gives the revenue from sales and rentals of Crown lands for the year 1928-29:—

STATE LAND REVENUE, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Sales ..	141,168	95,465	20	30,551	202,195	22,769	492,168
Rental ..	1,984,020	247,387	1,258,869	269,320	158,754	31,769	3,950,119
Forestry ..	119,383	116,333	240,452	..	153,533	14,803	644,504
Total ..	2,244,571	459,185	1,499,341	299,871	514,482	69,341	5,086,791

(v) *Commonwealth Payments.* The payments to the States (inclusive of special grants but excluding the contributions in respect of sinking fund on States' Debts and Federal Aid Roads grants) represent in each instance a considerable proportion of the States' revenue, and for the year 1928-29 aggregated £7,954,708, or 6.65 per cent. of the total revenue of the States.

(vi) *Miscellaneous.* In addition to the foregoing, there are in each State several miscellaneous sources of revenue, including such items as interest, fines, fees, etc., which for the year 1928-29 aggregated £9,250,588. Of this amount, interest was responsible for £5,196,187.

Division II.—Expenditure.

1. *General.*—The principal heads of State expenditure from Consolidated Revenue Funds are :—

- (a) Interest and sinking funds in connexion with public debt; (b) Working expenses of railways and tramways; (c) Justice; (d) Police; (e) Penal establishments; (f) Education; (g) Medical and charitable expenditure; and (h) All other expenditure.

Of these, that of working expenses of railways and tramways was the most important, and for the year 1928-29 represented about 35 per cent. of the aggregate expenditure from the Consolidated Revenue Fund. Next in importance for that year was the item of interest and sinking fund in connexion with the public debt, then education, medical and charitable expenditure, and police, in the order named.

2. *Total Expenditure.*—The total expenditure from Consolidated Revenue Funds in the several States, and the expenditure per head of population during each of the years 1924-25 to 1928-29 are given in the table hereunder :—

STATE EXPENDITURE.—CONSOLIDATED REVENUE FUNDS, 1924-25 TO 1928-29.

Year.	N.S.W. (a)	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL.							
	£	£	£	£	£	£	£
1924-25	40,336,803	24,170,483	14,880,288	9,680,037	8,439,844	2,675,618	100,183,073
1925-26	42,820,400	25,559,583	16,154,404	10,460,943	8,907,308	2,698,262	100,600,900
1926-27	45,481,416	27,744,903	16,490,954	11,834,947	9,722,588	2,855,077	114,129,885
1927-28	48,857,763	27,521,270	16,707,564	11,621,834	9,834,415	2,867,605	117,410,451
1928-29	51,066,805	28,104,947	16,902,145	11,771,772	10,223,919	2,855,977	120,925,565

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1924-25	17 17 10	14 11 9	17 16 5	17 19 6	23 3 7	12 5 8	17 1 6
1925-26	18 12 7	15 3 7	18 15 2	18 19 5	23 18 8	12 8 8	17 16 3
1926-27	19 7 5	16 4 2	18 13 10	20 17 11	25 13 5	13 5 11	18 14 1
1927-28	20 7 1	15 16 1	18 11 7	20 3 8	25 1 5	13 5 8	18 17 3
1928-29	20 17 8	15 19 2	18 8 9	20 6 5	25 3 10	13 3 9	19 2 5

(a) Expenditure from Public Revenue; includes certain moneys paid from Special Funds.

Details of the expenditure are given in the next table.

3. Details of Expenditure for 1928-29.—The following table shows the total expenditure and expenditure per head under each of the principal items:—

STATE EXPENDITURE.—DETAILS, 1928-29.

Particulars.	N.S.W. (c)	Victoria. (c)	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL.							
	£	£	£	£	£	£	£
Public debt (interest, sinking fund, etc.)..	12,690,880	7,941,211	5,478,212	4,623,395	3,346,792	1,068,987	35,149,477
Railways and tramways (working expenses)	19,613,694	19,457,047	16,200,801	13,430,954	3,347,541	5583,126	42,633,163
Justice	674,578	302,871	215,704	76,925	93,955	26,604	1,390,637
Police	1,749,575	917,454	595,490	315,338	236,332	93,609	3,907,798
Penal establishments	382,499	113,253	40,132	49,140	28,204	11,675	624,903
Education	5,000,666	2,918,442	1,663,071	1,009,864	717,019	328,088	11,637,150
Medical and charitable	3,795,500	1,454,507	926,015	586,095	453,328	200,749	7,416,194
All other expenditure	7,159,413	5,000,162	1,782,720	1,680,061	2,000,748	543,139	18,166,243
Total ..	51,066,805	28,104,947	16,902,145	11,771,772	10,223,919	2,855,977	120,925,565

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public debt (interest, sinking fund, etc.)..	5 3 10	4 10 2	5 19 6	7 19 7	8 4 11	4 18 9	5 11 2
Railways and tramways (working expenses)	8 0 5	15 7 5	16 15 4	15 18 5	8 4 11	12 13 10	6 14 10
Justice	0 5 6	0 3 5	0 4 9	0 2 8	0 4 8	0 2 5	0 4 5
Police	0 14 3	0 10 5	0 13 0	0 10 11	0 11 8	0 8 8	0 12 4
Penal establishments	0 3 2	0 1 3	0 0 10	0 1 8	0 1 5	0 1 1	0 2 0
Education	2 0 11	1 13 2	1 16 3	1 14 11	1 15 4	1 10 4	1 16 10
Medical and charitable	1 11 1	0 16 6	1 0 2	1 0 3	1 2 4	0 18 6	1 3 5
All other expenditure	2 18 6	2 16 10	1 18 11	2 18 0	4 18 7	2 10 2	2 17 5
Total ..	20 17 8	15 19 2	18 8 9	20 6 5	25 3 10	13 3 9	19 2 5

(a) Including 9.79 miles of electric tramways operated by the Victorian Railways. (b) Railways only.
(c) Includes expenditure of certain moneys not paid into Consolidated Revenue.

§ 3. State Trust Funds.

1. Nature.—In addition to the moneys received as revenue and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the State Governments in trust for various purposes. In most of the States also, sinking funds for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Governments. In all the States except New South Wales, life assurance companies operating are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits help to swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., also find a place. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be liquidated in this manner is open to question.

2. Extent.—The amount of trust funds held on the 30th June, 1929, was as follows:—

STATE TRUST FUNDS, 30th JUNE, 1929.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Amount of trust funds	24,705,014	6,130,485	327,941	1,255,179	14,360,375	812,502	47,591,496

§ 4. State Loan Funds.

Division I.—Loan Expenditure.

1. General.—So far back as the year 1842, revenue collections were supplemented with borrowed moneys, the earliest loan being by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2½d. to 5½d. per £100 per diem, or approximately from 4½ per cent. to 8 per cent. per annum. Australian public borrowing, however, is mainly due to the fact that the State Governments, in addition to ordinary administrative duties, undertake functions which in other countries are usually entrusted to local authorities or left to private enterprise. Foremost amongst these are the construction and control of the railway systems, but loan moneys have largely been used for improvements to harbours and rivers, and the construction of water supply and sewerage works. The State loan expenditure and public debt thus differ very materially from those of most European countries, and from those of the Commonwealth, where such expenditure was very largely incurred for purposes of defence, or in the prosecution of war. As shown above, the State debts consist chiefly of moneys raised and expended with the object of assisting the development of the resources of the country, and are, to a very large extent, represented by tangible assets.

2. Loan Expenditure, 1928–29.—For the year ended 30th June, 1929, State net expenditure from loan funds (exclusive of revenue deficits charged to loan and Treasury Bills retired) was £31,776,517. Details for the year for each State are given in the following table:—

STATE NET LOAN EXPENDITURE, 1928–29.

Heads of Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Railways ..	6,326,685	1,249,409	1,212,131	826,144	826,506	Cr. 11,684	10,309,185
Tramways ..	30,286	..	..	..	8,551	..	38,837
Water Supply ..	676,154	..	17,045	421,820	425,004	..	..
Sewerage ..	460,648	..	..	170,355	151,211	..	..
Water Conservation, etc.	623,865	..	81,707	202,283	(a)	..	..
Harbours, Rivers and Lighthouses ..	851,270	1,049	..	162,245	274,060	230,679	6,002,750
Roads and Bridges ..	3,120,075	802,307	165,524	10,856	384,685	..	..
Public Buildings (other than State schools)	502,829	25,774	..	139,145	92,353	34,431	..
State Schools ..	745,881	275,487	198,965	63,296	..	34,489	2,112,650
Immigration ..	11,055	..	..	2,714	11,887	..	25,656
Development of mines and mineral resources	..	..	..	..	79,752	..	79,752
Agricultural Bank ..	..	..	Cr. 76,140	650,000	704,445	..	1,278,305
Advances to settlers	..	123,716	43,299	511,739	976,714	42,448	1,697,916
Land purchased for settlement ..	..	1,243,196	..	Cr. 52,209	..	Cr. 12,855	1,178,132
Loans to local bodies	..	..	196,236	366,102	9,780	..	577,958
Rabbit-proof fencing	30,500	55,198	Cr. 16,361	4,292	..	..	73,629
Electricity supply	204,205	1,713,794	..	..	48,479	56,793	2,023,271
Other public works and purposes ..	665,629	134,524	319,247	177,040	378,848	Cr. 31,323	1,644,565
Total ..	14,249,082	7,128,273	2,141,653	3,536,422	4,372,269	348,818	31,776,517
Treasury Bills retired	..	..	1,328,188	Cr. 8,211	..	..	1,319,977
Revenue deficit ..	..	..	..	..	..	..	..
Grand Total ..	14,249,082	7,128,273	3,469,841	3,528,211	4,372,269	348,818	33,096,494

(a) Included in water supply.

3. Loan Expenditure, 1924-25 to 1928-29.—The following table gives the loan expenditure during each of the years 1924-25 to 1928-29 :—

STATE NET LOAN EXPENDITURE, 1924-25 TO 1928-29.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL.							
	£	£	£	£	£	£	£
1924-25	9,175,686	7,940,589	3,689,165	6,085,175	4,099,021	242,485	31,232,121
1925-26	11,180,482	8,001,375	3,905,863	6,430,014	4,078,686	540,152	34,136,572
1926-27	10,422,270	8,962,353	3,598,957	6,074,387	4,113,054	329,698	33,500,719
1927-28	14,407,619	8,478,238	3,198,506	3,882,268	4,680,260	377,777	35,024,688
1928-29	14,249,082	7,128,273	2,141,653	3,536,422	4,372,269	348,818	31,776,517

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1924-25	4 1 5	4 15 10	4 8 4	11 6 0	11 5 2	1 2 3	5 6 0
1925-26	4 17 3	4 15 0	4 10 9	11 13 2	10 19 2	2 9 9	5 14 1
1926-27	4 8 9	5 4 9	4 1 7	10 14 6	10 17 2	1 10 8	5 9 10
1927-28	6 0 0	4 17 4	3 11 2	6 14 10	11 18 7	1 15 0	5 12 6
1928-29	5 16 7	4 1 0	2 6 9	6 2 1	10 15 5	1 12 3	5 0 6

The loan expenditure per head of population varies in the different States and in different years, reaching its highest point for the five years under review in Western Australia in 1927-28 with £11 18s. 7d. per head, and its lowest in Tasmania in 1924-25 with £1 2s. 3d. per head.

4. Total Loan Expenditure to 30th June, 1929.—The total loan expenditure of the States from the initiation of borrowing to the 30th June 1929, amounted to £739,199,881. The purposes for which this sum was expended are shown in the following table :—

TOTAL STATE LOAN EXPENDITURE TO 30th JUNE, 1929.

Heads of Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Railways	130,012,097	72,357,133	60,244,291	31,819,932	22,444,139	6,947,918	323,785,560
Tramways	12,243,804	..	..	..	1,056,401	..	13,300,205
Telegraphs and telephones	1,762,095	..	996,587	991,772	332,293	142,410	4,225,157
Water supply	22,516,768	..	..	12,433,856	7,132,425	..	..
Sewerage	12,822,525	..	..	2,165,918	1,842,841	..	..
Water conservation ..	12,982,463	..	..	7,507,016	..	..	..
Harbours, rivers and lighthouses	21,882,296	1,281,104	3,287,033	7,412,833	5,399,855	..	..
Roads and bridges ..	11,723,880	10,666,339	2,123,210	3,233,872	1,660,472	6,590,503	75,261,457
Defence	1,457,536	149,323	363,085	291,615	..	123,224	2,389,783
Public buildings (excluding State schools) ..	11,070,325	931,840	3,786,161	1,153,426	1,511,197	1,038,167	..
State schools .. ..	..	4,740,041	..	1,664,393	..	630,329	26,576,379
Immigration	765,496	20,000	2,763,071	2,714	494,817	235,000	4,231,098
Development of mines and mineral resources ..	..	520,421	..	..	2,369,762	..	2,890,183
Agricultural Bank ..	..	..	2,513,794	2,095,001	3,734,445	..	8,343,240
Advances to settlers ..	1,075,330	1,956,806	..	9,796,994	17,737,801	529,006	..
Land purchased for settlement	7,391,767	35,947,786	2,339,147	1,703,012	324,662	2,668,472	81,470,842
Loans to local bodies ..	..	1,129,414	4,839,411	3,461,074	39,309	1,526,395	11,045,603
Rabbit-proof fencing ..	380,531	595,657	363,298	253,451	328,703	..	1,932,690
Electricity supply ..	1,022,579	14,518,038	..	..	1,126,841	3,650,518	20,317,976
Other public works and purposes	49,539,638	46,405,070	17,846,605	49,637,836	6,394,835	1,727,437	51,551,521
Total	258,655,289	176,447,644	103,626,456	95,624,765	73,980,798	25,864,929	739,199,881

(a) Includes industrial undertakings, grain elevators, returned soldiers' aid, etc. (b) Included in Water supply. (c) Includes £3,662,410 expenditure on industrial undertakings, £1,646,643 on Central Sugar Mills, £4,437,838 Treasury Bills retired, and Funded Deficits and Deficits on Loans, £3,056,470. (d) Includes Revenue Deficits, £3,875,682. (e) Includes Revenue Deficits, £1,041,338. (f) Includes Treasury Bills retired and Revenue Deficits, £496,272 and Deficits on Loans, £345,905.

The figures in the table show the amounts actually spent, and differ from those given later in the statements relating to the public debt, which represent the amount of loans still unpaid. The statement above includes all expenditure, whether the loans have been repaid or are still in existence. In the public debt statement, however, loans repaid are not included, and in the case of loans still outstanding, each is shown according to the amount repayable at maturity, and not according to the amount originally available for expenditure.

Division II.—State Public Debts.

1. *General.*—The first government loan raised in Australia was obtained by New South Wales in 1842. This and nine other loans prior to 1855 were all procured locally. In the last-mentioned year, Australia approached the London market, the occasion being the placing of the first instalment of the New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a borrower in 1854, and made its first appearance on the London market in 1859. In the other States the first public loans were raised in the following years:—Queensland 1861, South Australia 1856, Western Australia 1845, and Tasmania 1867.

2. *State Debts, 1925 to 1929.*—The table hereunder shows the State public debts and the amounts owing per head of population at the 30th June in each year from 1925 to 1929 inclusive. The totals include sums advanced by the Commonwealth to the States for settling returned soldiers on the land, and for this reason they differ in some cases from those given in previous issues. On the transfer of the Queensland State Savings Bank business to the Commonwealth Bank in 1920, Queensland Government securities were handed to the latter for the Savings Bank current account credit balance and for amounts owing on account of Advances to Settlers and Workers' Dwellings. This transaction added a total of £5,936,916 to the Public Debt without involving any additional borrowing. Repayments reduced this amount at 30th June, 1929, to £3,524,110.

STATE PUBLIC DEBTS, 30th JUNE, 1925 TO 1929.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL.							
30th June, 1925	£ 215,331,110	£ 128,445,565	£ 96,389,067	£ 72,510,738	£ 64,493,261	£ 23,894,416	£ 601,064,157
" 1926	223,488,708	138,738,141	102,309,501	79,250,916	70,799,200	24,475,463	639,061,929
" 1927	240,725,935	146,353,163	105,711,107	88,112,110	71,455,083	24,512,321	676,869,719
" 1928	258,474,897	157,283,470	112,138,970	92,223,165	77,071,749	24,826,560	722,018,812
" 1929	269,975,883	155,989,652	113,355,041	94,256,162	70,132,660	22,697,092	726,406,490
PER HEAD OF POPULATION.							
30th June, 1925	£ s. d. 94 16 0	£ s. d. 76 17 6	£ s. d. 112 14 2	£ s. d. 133 10 2	£ s. d. 175 4 10	£ s. d. 112 15 2	£ s. d. 101 10 5
" 1926	96 9 3	81 17 6	116 6 10	141 18 1	188 14 4	116 17 11	105 18 4
" 1927	101 10 11	84 15 5	118 3 9	154 6 9	185 11 6	117 14 11	109 19 2
" 1928	106 13 6	80 18 1	122 19 11	159 12 6	192 16 5	117 19 4	115 2 4
" 1929	109 12 9	88 5 0	122 5 5	162 13 6	170 6 8	106 16 1	114 4 0

The greatest increase in indebtedness was experienced in New South Wales, which added £54,644,773 during the period under review. The public debt of the whole of the States increased during the same period by £125,342,333, or at the rate of over £31,000,000 per annum.

Under the provisions of the "Financial Agreement Act 1928" the Commonwealth will on 1st July, 1929, take over:—

(a) the balance then unpaid of the gross public debt of each State existing on 30th June, 1927; and

(b) all other debts of each State existing on 1st July, 1929, for moneys borrowed by that State which by this agreement are deemed to be moneys borrowed by the Commonwealth for and on behalf of that State—

and will in respect of the debts so taken over assume as between the Commonwealth and the States the liabilities of the States to bondholders.

Particulars of the debts to be taken over were published in Official Year Book, No. 22. (See p. 1025).

3. Place of Flotation of Loans.—(i) *For each State.* As pointed out previously, the yearly loans, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London market, the practice of raising loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption and other loans locally, with very satisfactory results. Moreover, certain loans have been placed in New York on account of all States. The following table gives particulars of loans outstanding on the 30th June, 1929, which had been floated abroad and in Australia respectively:—

STATE PUBLIC DEBTS.—PLACE OF FLOTATION OF LOANS, 30th JUNE, 1929.

State.	Floated Abroad.			Floated in Australia.	Grand Total.
	London.	New York.	Total.		
	£	£	£	£	£
New South Wales	158,251,864	14,037,173	172,289,037	97,686,846	269,975,883
Victoria ..	59,834,565	4,658,060	64,493,025	91,496,627	155,989,652
Queensland ..	64,865,592	7,956,766	72,822,358	40,532,683	113,355,041
South Australia..	41,514,017	1,789,767	43,303,784	50,952,378	94,256,162
Western Australia	43,609,018	2,100,052	45,709,070	24,423,590	70,132,660
Tasmania ..	13,643,029	236,309	13,879,338	8,817,754	22,697,092
Total ..	381,718,085	30,778,527	412,496,612	313,909,878	726,406,490

(ii) *Total, All States.* The next table shows particulars of the aggregate State indebtedness at the end of the years 1924-25 to 1928-29.

STATE PUBLIC DEBTS.—PLACE OF FLOTATION OF LOANS, 30th JUNE, 1925 TO 1929.

Year.	Floated Abroad.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
30th June, 1925 ..	335,472,149	55·81	265,592,008	44·19	601,064,157
" 1926 ..	357,832,118	55·99	281,229,811	44·01	639,061,929
" 1927 ..	373,360,219	55·16	303,509,500	44·84	676,869,719
" 1928 ..	416,660,672	57·71	305,358,140	42·29	722,018,812
" 1929 ..	412,496,612	56·79	313,909,878	43·21	726,406,490

4. Rates of Interest.—As mentioned previously, the highest rate of interest paid for the earliest State loans was fivepence farthing per £100 per diem, or, approximately, 8 per cent. per annum. At present the rates vary from $7\frac{1}{2}$ per cent. to 3 per cent., no fewer than twenty-two separate rates being involved. It is probable, however, that the debt at the higher rates will largely increase in the future, since conversion can scarcely be effected at present at a lower rate of interest than 5 per cent. The average rate payable on the aggregate indebtedness is more than $4\frac{1}{2}$ per cent. For the separate States the average varies considerably, being lowest in the case of Tasmania and

Queensland and highest in that of South Australia, the difference between these two average rates being about $\frac{1}{4}$ per cent. The table hereunder gives particulars of the rates of interest payable at the 30th June, 1929 :—

STATE PUBLIC DEBTS.—RATES OF INTEREST PAYABLE, 30th JUNE, 1929.

Rates of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
%	£	£	£	£	£	£	£
7 $\frac{1}{2}$..	2,311,068	565,814	769,222	513,564	1,380,000	268,649	5,808,317
7 ..			2,465,838	..	..	..	2,465,838
£6/15/2 ..	1,250,000	613,248	10,742	..	477,802	..	2,351,792
£6/14/- ..	..	..	67,026	..	500,000	19,280	586,306
6 $\frac{1}{2}$..	6,500,000	..	3,080,820	3,000,000	250,000	2,360,093	15,190,913
£6/7/- ..	4,535,099	5,480,743	1,580,780	1,730,158	1,939,883	900,000	16,166,663
£6/1/3 ..	..	..	386,000	..	..	..	386,000
6 ..	18,774,466	5,138,419	6,412,045	14,622,136	5,977,335	484,043	51,408,444
5 $\frac{1}{2}$..	18,075,999	..	..	1,051,993	..	..	19,127,992
5 $\frac{1}{4}$..	34,908,468	20,140,412	15,018,105	5,807,941	4,782,757	1,496,834	82,154,517
£5/6/11 ..	1,874,412	3,553,124	501,241	522,283	1,045,559	600,000	8,096,619
£5/5/3 ..	85,405	1,581,147	309,730	67,000	87,958	341,635	2,472,875
5 $\frac{1}{2}$..	51,327,106	26,781,952	9,241,810	21,709,210	3,327,191	3,101,498	115,488,767
5 $\frac{1}{4}$ ..	..	670,000	..	..	..	..	670,000
5 ..	61,655,854	60,000,550	30,914,032	27,033,365	23,490,879	3,559,019	206,653,699
4 $\frac{1}{2}$ ..	..	6,233,980	..	500,000	..	..	6,735,980
4 $\frac{1}{4}$..	15,580,422	1,005,484	7,834,403	321,660	5,764,980	334,839	30,841,788
4 ..	..	..	..	..	140,750	..	140,750
4 ..	20,737,989	4,192,251	12,588,808	6,548,780	8,507,801	4,157,717	56,683,346
3 $\frac{1}{2}$..	1,911,650	220,000	2,019,900	1,932,752	888,608	..	6,072,910
3 ..	13,833,856	10,302,013	14,715,156	4,933,727	7,827,410	4,482,735	56,094,897
3 ..	16,601,414	9,508,515	5,489,383	5,001,770	2,832,504	450,000	39,883,556
Overdue ..	12,675	..	..	11,816	..	..	24,491
Total ..	269,975,883	155,989,652	113,355,041	94,256,162	70,132,660	22,697,092	726,406,490
Interest payable—(a)							
London ..	7,614,862	2,785,711	3,008,391	1,963,759	1,958,646	601,771	17,933,140
New York ..	682,245	228,729	462,087	89,488	105,003	11,815	1,579,367
Australia ..	5,217,919	4,708,876	1,981,417	2,703,849	1,325,545	477,695	16,415,301
Total ..	13,515,026	7,723,316	5,451,895	4,757,096	3,389,194	1,091,281	35,927,808
Amount per head of population	£5/8/2	£4/7/5	£5/17/7	£8/16/5	£8/4/8	£5/7/4	£5/12/11
Average rate	£5/0/1	£4/19/-	£4/16/2	£5/0/11	£4/16/7	£4/16/2	£4/18/11

(a) Includes contributions payable by Commonwealth and British Governments towards Interest on Migration Loans.

The average rate of interest payable has risen from £4 17s. 1d. per cent. in 1924–25 to £4 18s. 11d. in 1928–29.

5. Dates of Maturity.—Securities like the British Consols are interminable, but Australian debts have in most cases a fixed date for repayment, there being a few exceptions which are included in the following table under the headings “interminable,” “terminable at Government option,” and “date not fixed.” Those “terminable at Government option” include amounts which are payable by the respective Governments after giving a specified notice, and those “date not fixed” consist of certain amounts owing to the Commonwealth Government. In most cases at date of maturity renewal is effected in respect of the greater portion of the loan, as provision for redemption has been made in exceptional cases only. In order to avoid application to the market at an unfavourable time, several States adopted the practice of specifying a period prior to the date of maturity within which the Government, on giving twelve, or in some cases

six months' notice, has the option of redeeming the loan. The Government can, therefore, take advantage of opportunities that may offer during the period for favourable renewals. Particulars concerning the due dates of the State loans outstanding on the 30th June, 1929, are given in the following table.

Those loans in the case of which the Government has the option of redemption during a specified period have been in each instance classified according to the latest date of maturity.

While the latest dates of maturity of the various loans extend over the period 1929 to 1975, the average for the States as a whole is almost 16½ years.

STATE PUBLIC DEBTS.—DUE DATE OF AMOUNT OUTSTANDING ON 30th JUNE, 1929.

Year of Maturity.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Overdue ..	12,675			11,816			24,491
1929 ..	450,140	9,067,600	12,741,415	2,961,727	473,125	419,735	27,013,742
1930 ..	15,452,469	15,257,153	6,419,568	7,324,850	2,326,771	1,932,443	48,713,254
1931 ..	4,594,089	4,737,529	713,220	2,050,974	3,968,704	379,430	16,443,946
1932 ..	15,747,795	5,355,736	29,000	2,400,250	1,224,857	183,224	24,940,862
1933 ..	19,081,343	12,882,620	1,198,000	5,722,351	1,847,837	916,993	41,649,144
1934 ..	14,347,823	13,735,225	3,004,340	6,850,237	2,167,347	138,519	40,243,491
1935 ..	20,208,865	3,358,315	397,270	7,361,963	6,373,603	840,375	41,630,891
1936 ..	1,390,977	4,834,869	4,103,070	5,116,651	1,935,832	11,330	17,392,649
1937 ..	569,970	40,000		1,370,401		2,287	1,982,658
1938 ..	117,055	483,000	2,773,697	1,230,831	1,939,350	61,567	6,005,500
1939 ..	5,004,210	1,837,057	1,434,000	4,078,394	110,806	492,551	12,957,018
1940 ..	10,491,000	4,248,900	2,000,000	6,004,361	3,803,253	7,810,022	40,358,036
1941 ..	7,882,788	1,996,050	3,880,293	1,846,703	292,680	36,647	15,935,141
1942 ..	13,687,889	14,522,240	14,800	8,051,107	61,697	1,303,927	37,641,660
1943 ..	1,536,319	1,097,400	1,178,200	2,278,988	1,346,700	27,245	7,464,852
1944 ..	252,900	400					253,300
1945 ..	11,006,000	1,856,943	7,435,749	798,812	5,064,890	200,000	26,962,394
1946 ..		15,400				250,000	265,400
1947 ..	3,200		6,553,558		1,703,600		8,260,358
1948 ..	6,500		290,500				297,000
1949 ..	2,900	11,699,271				42,000	11,744,171
1950 ..	12,079,300		6,946,600			2,800,000	21,825,900
1951 ..			999,300				999,600
1952 ..	3,100		125,400				128,500
1953 ..	6,500	239,500	2,137,609			34,000	2,417,609
1954 ..	2,900	311,874					314,774
1955 ..	21,716,500	1,912,360	761,430	762,560	4,877,459		30,030,309
1956 ..	3,922,922	838,734	1,123,395				5,885,051
1957 ..	22,985,468	1,907,367	1,551,238	1,027,207	568,396	230,309	28,275,985
1958 ..	5,059,233						5,059,233
1960 ..		8,970,700	20,228,800	2,989,617	888,608		33,077,725
1962 ..	10,500,000				4,964,083		15,464,083
1964 ..					1,566,000		1,566,000
1965 ..	14,448,000				2,673,062		17,121,062
1970 ..			2,000,000				2,000,000
1975 ..	7,614,460	16,931,216	8,788,795	15,231,905	13,922,798	1,748,779	64,237,953
Indefinite ..	532,889			98,382			631,271
Terminable at Government option ..	7,361,770			5,001,770			12,363,540
Half-yearly Drawings ..			11,824,011			699,645	12,524,556
Date not fixed ..	9,805,984	16,952,193	2,700,583	3,683,805	5,431,202	2,129,564	40,703,331
Total ..	269,975,883	155,989,652	113,355,041	94,256,162	70,132,660	22,697,092	726,406,490
Average period to maturity, years ..	15.97	14.21	18.80	15.20	21.86	13.94	16.44

6. Sinking Funds.—The practice of providing sinking funds has been consistently adopted in the case of Western Australia only. This State has established, in connexion with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. The funds are placed with trustees in London, by whom they are invested in securities, and applied from time to time to the redemption of loans falling due. In the other States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the

Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. The following table gives the sinking funds and net indebtedness of each State at the 30th June, 1929 :—

STATE SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1929.

State.	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebtedness per Head.
	£	£	£	£ s. d.
New South Wales ..	269,975,883	428,232	269,547,651	109 9 3
Victoria ..	155,989,652	391,078	155,598,574	88 0 7
Queensland ..	113,355,041	859,585	112,495,456	121 6 10
South Australia ..	94,256,162	32,441	94,223,721	162 12 4
Western Australia ..	70,132,660	1,006,328	69,126,332	167 17 10
Tasmania ..	22,697,092	16,011	22,681,081	106 14 7
Total ..	726,406,490	2,733,675	723,672,815	113 15 5

C. COMMONWEALTH AND STATE PUBLIC DEBTS.

The table hereunder shows the public debt of the Commonwealth and of the States at the 30th June in each of the years 1925 to 1929. In this table all moneys borrowed by the Commonwealth on behalf of the States have been included with State debts only, and similarly, the debts taken over by the Commonwealth from South Australia on account of the Northern Territory and of the Port Augusta-Oodnadatta Railway have now been included with the Commonwealth Debt.

COMMONWEALTH AND STATE PUBLIC DEBTS, 1924-25 TO 1928-29.

Particulars.	Redeemable.	At 30th June—				
		1925.	1926.	1927.	1928.	1929.
		£	£	£	£	£
Commonwealth— War Debt ..	Overseas	98,097,605	96,865,888	95,572,848	96,822,659	93,810,641
	Australia	213,096,591	207,680,474	201,332,522	196,597,448	194,007,104
	Total	311,194,196	304,546,357	296,905,370	293,420,107	287,817,745
Works and Other Purposes ..	Overseas	30,231,957	49,606,050	46,980,102	56,684,465	65,975,650
	Australia	20,646,614	20,786,307	22,726,033	22,679,517	23,828,177
	Total	50,878,571	70,392,357	69,706,135	79,363,982	89,803,827
	Overseas	128,329,562	146,471,933	142,552,950	153,507,124	159,786,291
	Australia	233,743,205	228,466,781	224,058,555	219,276,965	217,835,281
	Grand Total	362,072,767	374,938,714	366,611,505	372,784,089	377,621,572
States ..	Overseas	335,472,149	357,752,782	373,360,219	416,660,672	412,496,612
	Australia	265,592,008	281,309,147	303,509,500	305,358,140	313,909,378
	Total	601,064,157	639,061,929	676,869,719	722,018,812	726,406,490
Grand Total Public Debt Commonwealth and State	Overseas	463,801,711	504,224,715	515,913,169	570,167,796	572,282,903
	Australia	499,335,213	509,775,928	527,568,055	524,635,105	531,745,159
	Grand Total	963,136,924	1,014,000,643	1,043,481,224	1,094,802,901	1,104,028,062

D. THE AUSTRALIAN LOAN COUNCIL.

The Australian Loan Council, consisting of the Treasurers of the Commonwealth and of the States, was created as the result of representations made by the Commonwealth Government, and has for its object the prevention of undue competition and clashing in the raising of loans.

Until July, 1925, the Council consisted of the Treasurers of the Commonwealth and of each of the States; in August of that year the Treasurer of New South Wales withdrew from the Council, but rejoined at the end of 1927.

At its first meeting, held on 1st February, 1924, the Loan Council recognized the necessity for co-operation in the raising of loans. The terms to be offered by the several governments for loans in Australia up to 30th June, 1924, were agreed to, and arrangements were made to prevent unnecessary clashing during the period required by the Commonwealth for the flotation of its War Gratuity Redemption and Conversion Loan.

Up to June, 1925, the Commonwealth and States issued their own loans in London and elsewhere outside Australia, but the amounts were limited to sums agreed upon at the Loan Council by the several Treasurers. About the middle of 1925, however, the Loan Council decided that there should be no competition for loans in the American market, and that borrowing in America, and borrowing simultaneously in America and London, on behalf of the Commonwealth and of the States, should be conducted solely by the Commonwealth. The successful flotation in July, 1925, of a loan of £20,000,000 in London and New York was regarded as proof of the soundness of the Council's new policy.

During the year 1928-29 the loan raisings amounted to £76,797,721, details of which flotations are given on page 260 *ante*.

E. PRIVATE FINANCE.

§ 1. Coinage.

Australian Mints.—(i) *General.* Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855. The Melbourne branch was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment in return for which the mint receipts are paid into the respective State Treasuries, and it might be said until recently that, apart from expenditure on buildings, new machinery, etc., the accounts paid into the Treasuries fairly balanced the mint subsidies. Early in 1923, however, it was announced that owing to losses incurred in the operations of recent years, the New South Wales Government had decided to close the Sydney branch at the end of 1923. This decision was, however, not carried out at that time, but the mint was closed at the end of 1926.

(ii) *Gold Receipts and Issues.* (a) *Receipts.* The receipts of gold during 1929 and the aggregate at each mint to the end of 1929 were as follows:—

AUSTRALIAN MINTS.—RECEIPTS OF GOLD, 1929, AND TOTAL.

Mint.	Deposits during 1929.	Total to end of 1929.		
		Quantity.		Value.
		Gross.	Fine.	
	Ozs. Gross.	Ozs.	Ozs.	£
Sydney .. ..	..	(a) 42,082,928	(a) 36,907,045	(a) 156,771,141
Melbourne .. ..	..	41,419,924	38,202,097	162,272,088
Perth .. ..	..	32,707,751	26,777,938	113,745,378
Total	623,312	116,210,603	101,887,080	432,788,607

(a) To end of 1926.

In cases of deposits containing over a certain minimum of silver, the excess is paid for at the rate fixed from time to time by the Deputy-Master of the branch mint concerned.

(b) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking a considerable quantity of gold cast into 10-oz. bars. During recent years the export was subject to regulation by the Commonwealth Government, but the embargo was lifted in 1925. The issues during 1929, and aggregate to end of that year, are shown in the table below :—

AUSTRALIAN MINTS.—ISSUES OF GOLD.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
1929—	£	£	£	£	£
Melbourne ..	436,719	..	436,719	131,261	567,980
Perth ..	1,606,625	..	1,606,625	2,904	1,609,529
Total, 1929	2,043,344	..	2,043,344	134,165	2,177,509
Aggregate—					
Sydney ..	144,435,550	4,781,000	149,216,550	7,574,408	156,790,958
Melbourne ..	147,147,805	946,780	148,094,585	14,177,976	162,272,561
Perth ..	103,295,277	367,338	103,662,615	10,062,729	113,725,344
Total to end of 1929 ..	394,878,632	6,095,118	400,973,750	31,815,113	432,788,863

(c) *Withdrawals of Worn Coin.* The mints receive light and worn coin for recoinage. The total withdrawals of worn gold coin were as follows :—Sydney (to 1926), £1,110,867; Melbourne, £882,205 (since and including 1890); and Perth, £1,401.

(iii) *Silver and Bronze Coinage.* (a) *Prices of Silver.* The value of silver has greatly decreased since its demonetization and restricted coinage in almost the whole of Europe. A noticeable increase, however, took place for some years after 1915, the price of silver following the general trend of world prices. Its average price in the London market in recent years is shown in the table in Chapter XXI. Mineral Industry.

(b) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin cost, at the average 1929 London market price of 2s. $\frac{1}{2}$ d. per ounce, approximately £1 4s. 6d. The difference nearly represents, therefore, the gross profit or seigniorage made on the coinage of every £3 6s. Negotiations for the coinage of silver and bronze coin in Australia took place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, but no decision was arrived at. As section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a Federal matter, the question remained in abeyance until 1907, when the matter was discussed at the Colonial Conference, London, with the result that in the latter part of 1908 the Commonwealth Treasurer announced his intention of initiating the coinage. Since 1916 silver and bronze coins have been minted in Australia on behalf of the Commonwealth Treasury.

(c) *Silver and Bronze Issues.* The total issues of silver and bronze coinage on account of the Commonwealth since 1910 as obtained from returns furnished by the Treasury, are set out in the following table :—

AUSTRALIAN MINTS.—SILVER AND BRONZE ISSUES, 1910 TO 1929.

Year.	Silver.					Bronze.		
	2/-.	1/-.	6d.	3d.	Total.	1d.	½d.	Total.
	£	£	£	£	£	£	£	£
1910-1924 ..	2,368,800	1,471,000	538,400	546,400	4,924,600	257,593	81,290	338,883
1924-25 ..	101,800	33,600	36,400	35,950	207,750	4,820	4,360	9,180
1925-26 ..	379,000	96,300	96,000	59,575	630,875	12,830	5,760	18,590
1926-27 ..	381,000	99,400	87,900	74,575	642,875	11,810	8,865	20,675
1927-28 ..	123,400	50,600	64,400	66,800	305,200	18,460	3,620	22,080
1928-29 ..	71,000	12,400	20,000	24,600	128,000	13,030	5,510	18,540
Total ..	3,425,000	1,763,300	843,100	807,900	6,839,300	318,543	109,405	427,948

(d) *Withdrawals of Worn Silver Coin.* The value of worn silver coins received during 1929 was as follows :—Melbourne, £154,931; Perth, £7,200. The total withdrawals of worn silver coin were :—Melbourne, £1,711,661; Perth, £128,238; Sydney (to 1926), £1,248,672.

(iv) *Standard Weight and Fineness of Coinage.* The coinage of Australia, so far as the coins minted are concerned, is the same as that of the United Kingdom, and the same provisions as to legal tender apply, viz., gold coins are legal tender to any amount, silver for an amount not exceeding forty shillings, and bronze up to one shilling. The standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively. Particulars of the standard weights and fineness of Australian coinage were published in previous issues.

§ 2. Cheque-Paying Banks.

1. *Banking Legislation*—(i) *Commonwealth Legislation.* Under Section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to "Banking, other than State banking, also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money." Legislation under this authority comprises the following Acts: No. 27 of 1909, dealing with Bills of Exchange, Cheques, and Promissory Notes; No. 11 of 1910, dealing with Australian Notes; and No. 14 of 1910, a Bank Notes Tax Act. The Notes Act and the Bank Notes Tax Act were supplemented in the following year by the passing of Act No. 18 of 1911, "An Act to provide for a Commonwealth Bank," which passed both Houses and was assented to on 22nd December, 1911. Some account of the foundation of the Bank appeared in No. 6 to No. 10 issues of the Official Year Book.

As the initial expenses of the Bank were heavy, the early operations resulted in a small loss, but with the increasing prosperity of the institution the early deficit was gradually reduced, until on 30th June, 1915, it was entirely extinguished. The following table shows the aggregate net profits from the initiation of the Bank to the end of each of the last five financial years :—

COMMONWEALTH BANK.—AGGREGATE PROFITS, 1925 TO 1929.

Date.	Aggregate Net Profit to Date.			
	General Bank.	Savings Bank.	Rural Credits Departments.	Total.
	£	£	£	£
30th June, 1925 ..	4,098,392	890,838		4,989,230
" 1926 ..	4,309,787	1,140,740	6,024	5,456,551
" 1927 ..	4,585,181	1,446,333	26,000	6,057,514
" 1928 ..	4,909,327	1,795,822	61,266	6,766,415
" 1929 ..	5,367,950	2,037,057	109,928	7,514,935

In accordance with the provisions of section 30 of the Bank Act and section 9 (2) of the National Debt Sinking Fund Act, half of the net profits of the Bank have been placed to the credit of the Bank's Reserve Fund and half to the credit of the National Debt Sinking Fund. Up to 30th June, 1929, the latter fund has benefited to the extent of £1,500,510.

The Commonwealth Bank Act, 1924 was assented to on 20th August, 1924, and was brought into operation on 10th October, 1924. This Act was passed to broaden the scope of the Commonwealth Bank and to enable it to perform the functions for which it had been established. Five main amendments to the Bank Act 1911-20 are included, in accordance with which the following changes have been made:—(1.) A Board of Directors has been appointed to control not only the general business, but also that of the note issue. The Board consists of the Governor of the Bank, the Secretary to the Treasury, and six others who are or have been actively engaged in agriculture, commerce, finance or industry. In addition to the above Board there is a Board of Advice in London. (2.) The bank has been strengthened by the capitalization of £4,000,000 of the accumulated profits, and the Treasurer is authorized to raise by loans sums aggregating £6,000,000 and to lend the proceeds to the Commonwealth Bank as additional capital. The Ministry does not propose to interfere with the authority already included in the Commonwealth Bank Act to issue debentures up to £10,000,000. (3.) The Board is to fix and publish its discount rate. (4.) The associated banks settle their exchanges through the Commonwealth Bank. (5.) The associated banks supply to the Treasurer each quarter a statement of average weekly liabilities and assets in accordance with the schedule prescribed.

A further amending act—The Commonwealth Bank Act, 1927—provided for the separation of the Savings Bank Department from the General Bank and its establishment as a separate institution and the transfer to the "Commonwealth Savings Bank of Australia" of all assets and liabilities of the Savings Bank Department. The date on which this amending act became operative was fixed by proclamation as 9th June, 1928.

The amount of capital and reserves at the date of separation was allocated as follows: Commonwealth Bank of Australia, Capital, £4,000,000: Reserve Fund, £303,857. Commonwealth Savings Bank of Australia, Reserve Fund, £1,075,298.

Since the 1st July, 1927, the Bank has published a weekly statement of the accounts of the note issue and general banking departments of the Bank.

(ii) *State Legislation.* The Acts under which the various banks are incorporated differ somewhat. While most of the older banks were incorporated by special Act or Charter, e.g., the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand, the newer banks are generally registered under a "Companies Act," or some equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

(iii) *Australian Note Issue.* In December, 1920, the Australian Note Issue was handed over to the control of the Commonwealth Bank, the notes, however, still remaining Treasury Notes. The Note Issue Department of the Bank is administered by the above-mentioned Board of Directors. The notes in circulation on 24th June, 1929, amounted to £42,258,226, of which approximately 42 per cent. was held by the Banks and 58 per cent. by the public. Against this there was a reserve of gold coin and bullion

amounting to £22,151,497, or 52.4 per cent. At 30th June the assets of the Australian Note Issue Department included investments totalling £19,982,460, the annual amount of interest in respect of which was £976,239.

Details of the investments of the Australian Notes Account are given in Finance Bulletin No. 20.

Several important amalgamations of banking interests have taken place during recent years, particulars of which were given in the last issue of this work.

2. Banks in Operation and Capital Resources.—The paid-up capital of the 21 cheque-paying banks, together with their reserve funds, the rate per cent., and the amount of their last dividends are shown in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1929. In regard to the reserve funds it must be noted that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business :—

CHEQUE-PAYING BANKS.—CAPITAL RESOURCES, 30TH JUNE, 1929.

Bank.	Paid-up Capital.	Rate per cent. per annum of last Dividend and Bonus.	Amount of last Half-yearly Dividend and Bonus.	Amount of Reserved Profits. (c)	Amount carried forward to next Balance Period.
	£	%	£	£	£
Commonwealth Bank of Australia	4,000,000	..	..	818,585	..
Joint Stock Banks—					
Bank of Australasia	4,500,000	14	b 595,000	4,450,000	139,760
Union Bank of Australia Ltd. ..	4,000,000	15	300,000	4,850,000	99,404
English, Scottish and Australian Bank Ltd. ..	3,000,000	12½	b 375,000	3,000,000	311,479
Bank of New South Wales ..	7,500,000	10	a 187,500	5,900,000	168,654
Commercial Banking Coy. of Sydney Ltd. ..	4,739,013	10	236,951	4,075,000	65,215
Australian Bank of Commerce Ltd. ..	2,208,000	8	88,320	1,073,645	26,765
Primary Producers' Bank of Australia Ltd. ..	436,262	..	..	20,000	5,605
Rural (New South Wales Government)	5,694,200d	10	250,000	3,100,000	157,773
National Bank of Australasia Ltd.	5,000,000	10	250,000	3,100,000	157,773
Commercial Bank of Australia Ltd. ..	3,803,600	4 Pref., 15 Ord.	149,378	1,663,962	90,486
Ballarat Banking Coy. Ltd. ..	153,000	8	6,120	81,600	5,168
Queensland National Bank Ltd. ..	1,750,000	10	a 43,750	815,000	8,672
Queensland Deposit Bank Ltd. ..	55,087	5	b 2,754	40,000	22,188
Federal Deposit Bank Ltd. ..	318,714	12	17,251	78,000	1,290
Brisbane Permanent Building and Banking Co. ..	400,000	10	19,909	112,000	2,624
Bank of Adelaide	1,250,000	10	62,500	985,000	38,875
State Bank of South Australia ..	1,292,692	..	..	..	..
Total Australian Banks ..	50,100,568	..	2,334,433	30,862,792	1,143,958
Bank of New Zealand ..	6,858,114	10% "A" Pref., 13 2/11 % "B" Pref., 14½ % Ord.	b 814,893	3,425,000	617,591
Comptoir National d'Escompte de Paris ..	10,000,000	16	b1,600,000	4,066,823	9,348
Yokohama Specie Bank Ltd. ..	10,000,000	10	500,000	10,550,000	934,662
Grand Total	76,958,682	..	5,249,326	48,904,615	2,705,559

(a) Dividend for quarter. (b) For twelve months. (c) Exclusive of amounts carried forward to next balance period. (d) Stock and debentures issued.

3. Liabilities and Assets.—(i) *Liabilities, each State, Quarter ended 30th June, 1929.* Banks transacting business in any State are obliged under the existing State laws to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statement prepared by the bank for that purpose, and they have since the year 1908 furnished quarterly statements to the Commonwealth Statistician. As all other financial returns in this work generally refer to a period closing on the 30th June, the banking figures are given throughout for the June quarter of each year. The liabilities are those to the general public, and are exclusive of the bank's liabilities to

their shareholders, which are shown in the preceding table. It has been deemed desirable to keep the figures for the Commonwealth Bank separate from those of the Joint Stock Banks, and the figures set out in the tables which follow are, therefore, exclusive in every case of the Commonwealth Bank.

JOINT STOCK BANKS—LIABILITIES, JUNE QUARTER, 1929.

States and Territories.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances Due to Other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
New South Wales	64,115	1,674,588	1,214,863	50,569,305	75,541,458	126,110,763	129,064,329
Victoria ..	86,290	756,993	734,426	31,321,139	67,136,051	98,457,790	100,035,499
Queensland ..	a	788,993	103,581	13,967,317	23,768,126	37,735,443	38,627,417
South Australia	21,918	141,466	388,994	6,040,088	15,251,335	21,291,423	21,843,803
Western Australia	25,236	205,568	46,985	5,922,949	5,907,400	11,530,399	11,808,186
Tasmania ..	2,287	83,108	85,007	2,551,088	4,292,775	6,843,863	7,014,265
Northern Territory	..	42	55,745	106,449	87,595	194,044	249,831
Federal Capital Territory ..	..	3,761	..	37,047	73,944	110,991	114,752
Total ..	199,846	3,653,919	2,629,601	110,215,432	192,059,284	302,274,716	308,758,082

(a) In Queensland, Treasury Notes were used instead of bank notes.

(ii) *Liabilities, all States, June Quarters, 1925 to 1929.* In the next table, which shows the average liabilities of the Joint Stock Banks for the quarters ended 30th June, 1925 to 1929 for Australia as a whole, the growth in liabilities is almost entirely due to an increase in the deposits bearing interest.

JOINT STOCK BANKS.—LIABILITIES, JUNE QUARTER, 1925 TO 1929.

Year.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances Due to Other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
1925 ..	202,875	2,584,705	3,239,759	108,562,243	142,023,225	250,585,468	256,612,807
1926 ..	201,551	2,792,080	3,549,630	111,420,109	153,372,042	264,792,151	271,335,412
1927 ..	200,943	2,732,069	3,474,171	110,093,951	160,117,702	270,211,653	276,618,836
1928 ..	200,326	3,500,006	2,851,923	111,678,372	177,857,260	289,535,632	296,087,887
1929 ..	199,846	3,653,919	2,629,601	110,215,432	192,059,284	302,274,716	308,758,082

(iii) *Assets, each State, Quarter ended 30th June, 1929.* The average assets of the banks are shown in the following table :—

JOINT STOCK BANKS.—ASSETS, JUNE QUARTER, 1929.

States and Territories.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Australian Notes and Cash with Commonwealth Bank.	Government and Municipal Securities.	Landed and House Property.	Balances Due from other Banks.	Notes and Bills of other Banks.	Discounts, Over-drafts, and all other Assets.	Total Assets.
	£	£	£	£	£	£	£	£	£
N.S.W.	11,791,811	5,746	9,979,384	12,005,592	2,944,229	3,018,336	703,990	113,797,228	154,246,316
Victoria	8,125,642	41,699	6,334,120	10,014,417	2,068,174	872,656	856,650	76,723,122	105,036,480
Q'land	1,860,513	677	2,484,599	1,898,836	1,189,339	715,703	316,907	33,093,449	41,560,073
S. Aust.	1,622,103	187,416	2,077,150	312,742	478,944	384,216	124,274	21,636,865	26,823,710
W. Aust.	1,108,890	107,152	1,537,959	160,177	485,214	99,478	125,505	17,698,739	21,310,114
Tasmania	599,480	20	673,565	..	161,727	28,470	20,512	4,753,570	6,237,344
Nor. Ter.	2,872	352	6,131	..	500	..	..	26,019	35,874
Fed. Cap. Ter.	1,311	..	15,727	..	29,993	544	559	102,639	150,773
Total	25,112,622	343,062	23,108,635	24,391,764	7,358,170	5,119,403	2,135,397	267,831,631	355,400,684

(iv) *Assets, all States, June Quarters, 1925 to 1929.* The average assets of the banks for the June quarters of each of the years 1925 to 1929 are given below.

JOINT STOCK BANKS.—ASSETS, JUNE QUARTER, 1925 TO 1929.

Year.	Gold and Silver and Other Metals, Coin, Bullion or Bars.	Australian Notes.	Government and Municipal Securities.	Landed and Other Property.	Balances Due from Other Banks.	Notes and Bills of Other Banks.	Discounts, Overdrafts, and all Other Assets.	Total Assets.
	£	£	£	£	£	£	£	£
1925	27,052,408	23,211,903a	13,128,027	6,257,546	3,919,978	2,126,888	197,450,902	273,147,652
1926	26,670,333	22,635,460a	17,232,471	6,532,006	3,879,783	2,321,218	213,252,020	292,523,291
1927	26,322,453	22,555,655a	15,119,232	6,699,599	3,712,835	2,161,994	236,136,717	312,708,485
1928	25,736,158	27,284,852a	23,918,520	6,975,330	5,554,746	2,129,041	240,677,748	332,336,395
1929	25,455,684	23,108,635a	24,391,764	7,358,170	5,119,403	2,135,397	237,831,631	355,400,634

(a) Including Cash with Commonwealth Bank.

4. Percentage of Coin, Bullion, and Australian Notes on Liabilities at Call.—

(i) *General.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide with a division into fixed deposits and current accounts, the division, in default of a better one, is adopted, and in the following table "liabilities at call" are therefore understood to include the note circulation of the banks and the deposits not bearing interest. Since 1912, however, the former item has steadily decreased, and is now almost negligible as compared with the latter.

JOINT STOCK BANKS.—PERCENTAGE ON LIABILITIES OF COIN, BULLION, AND AUSTRALIAN NOTES, 1925 TO 1929.

Year.	Liabilities at Call.	Coin, Bullion, and Australian Notes.	Percentage on Liabilities at Call.
	£	£	%
1925	108,765,118	50,264,311	46.21
1926	111,621,660	49,305,793	44.17
1927	110,294,894	48,878,108	44.32
1928	111,878,698	53,081,010	47.45
1929	110,415,278	48,564,319	43.98

The figures in the last column show that the banks generally consider it advisable to hold from 44 to 47 per cent. of the amount of liabilities at call in coin, bullion, and notes.

(ii) *Percentage in each State.* The proportion of coin, bullion, and Australian notes to liabilities at call varies considerably amongst the States, and sometimes in the same State from year to year. A table is appended showing the percentage for each State for the quarter ended 30th June in each of the years 1925 to 1929:—

JOINT STOCK BANKS.—PERCENTAGE OF COIN, BULLION, AND AUSTRALIAN NOTES ON LIABILITIES AT CALL, 1925 TO 1929.

Year.	N.S.W. (a)	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	%	%	%	%	%	%	%	%
1925 ..	49.49	46.07	31.50	50.79	50.60	48.63	8.43	46.21
1926 ..	44.73	45.53	30.52	49.71	59.24	46.69	6.95	44.17
1927 ..	42.19	46.33	33.97	52.99	60.86	47.84	9.87	44.32
1928 ..	42.62	55.40	32.16	58.84	64.12	49.81	9.13	47.45
1929 ..	43.01	46.17	31.11	64.12	48.76	49.86	8.79	43.98

(a) Includes Federal Capital Territory.

(iii) *Queensland Treasury Notes.*—In Queensland, Treasury notes took the place of bank notes in 1893. These Treasury notes are disregarded in the quarterly statement of the banks; according to Treasury returns the amount outstanding on 30th June, 1929, was £22,475. Under the Australian Notes Act, previously referred to, the issue of notes by a State is now prohibited.

5. *Deposits and Advances.*—(i) *Deposits.* The amount and average per head of population of deposits held by the banks during each of the last five years are given hereunder.

JOINT STOCK BANKS.—DEPOSITS, 1925 TO 1929.

Year.	N.S.W. (a)	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
TOTAL.								
1925	£ 98,812,293	£ 85,674,995	£ 31,264,955	£ 20,217,717	£ 9,164,244	£ 5,249,078	£ 202,186	£ 250,585,468
1926	104,372,446	90,067,719	33,668,028	21,362,996	9,565,222	5,540,665	215,075	264,792,151
1927	106,553,424	91,923,910	32,996,221	22,625,309	10,067,814	5,833,872	211,103	270,211,653
1928	120,617,512	91,916,458	36,193,107	22,695,419	11,293,652	6,599,601	219,863	289,535,632
1929	126,221,754	98,457,790	37,735,443	21,291,423	11,530,399	6,843,863	194,044	302,274,716

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1925	43 9 6	51 6 8	36 16 9	37 5 7	24 19 1	24 12 7	54 13 9	42 7 0
1926	45 0 3	53 4 2	38 10 10	38 6 11	22 17 7	26 5 9	57 11 1	43 18 2
1927	45 0 11	53 6 7	37 1 5	39 13 9	26 5 5	27 17 4	50 11 1	43 19 3
1928	49 14 2	52 11 1	39 17 8	39 6 5	28 7 10	31 4 9	51 16 8	46 3 0
1929	51 2 10	55 14 5	40 17 6	36 14 9	28 2 4	32 2 8	47 7 3	47 9 10

(a) Includes Federal Capital Territory.

(ii) *Advances.* In the quarterly statements furnished by the banks, the column headed "all other debts due to the banks" is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposits of deed or by mortgage, etc. The form prescribed for quarterly returns furnished to the Commonwealth Statistician in 1908 and 1909 provided for a division of the amounts under this heading into a number of sub-headings, but all the banks were not in a position to make the necessary division, and as it is impossible to separate these items the totals in the column must, therefore, be treated as advances. The following table shows the totals for each State during the years 1925 to 1929:—

JOINT STOCK BANKS.—ADVANCES, 1925 TO 1929.

Year.	N.S.W. (a)	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
1925	£ 77,993,259	£ 63,181,481	£ 26,738,792	£ 13,623,369	£ 11,216,634	£ 4,688,567	£ 8,800	£ 197,450,902
1926	85,124,897	67,568,544	28,272,761	15,017,374	12,712,905	4,546,061	9,478	213,252,020
1927	91,213,825	75,668,559	31,929,661	18,447,113	14,047,168	4,819,660	10,731	236,136,717
1928	100,453,971	72,017,807	31,080,984	18,145,454	14,340,517	4,622,252	16,763	240,677,748
1929	113,899,867	76,723,122	33,093,449	21,636,865	17,698,739	4,753,570	26,019	267,831,631

(a) Includes Federal Capital Territory.

(iii) *Proportion of Advances to Deposits.* The percentage of advances on total deposits shows to what extent the needs of one State are supplied by the resources of another State, and, where the percentage for Australia as a whole exceeds 100 (as it did in the early years of the century), the banks must have supplied the deficiency from their own resources, or from deposits obtained outside Australia.

**JOINT STOCK BANKS.—PERCENTAGE OF ADVANCES ON DEPOSITS,
1925 TO 1929.**

Year.	N.S.W. (a)	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	%	%	%	%	%	%	%	%
1925 ..	78.93	73.75	85.51	67.38	122.39	89.32	4.35	78.79
1926 ..	81.56	75.02	83.98	70.30	132.91	82.05	4.41	80.54
1927 ..	85.60	82.32	96.77	81.53	139.53	82.62	5.08	87.39
1928 ..	83.28	78.35	85.88	79.95	126.98	70.04	7.62	83.13
1929 ..	90.24	77.92	87.70	101.62	153.50	69.46	13.41	88.61

(a) Includes Federal Capital Territory.

6. Commonwealth Bank of Australia.—(i) *Liabilities, June Quarter, 1929.*—It has been considered desirable that particulars of the liabilities and assets of the Commonwealth Bank should be shown separately from other trading banks. In effecting comparisons with previous years, it should be noted that the Savings Bank Department functions as a separate entity, and such figures have been excluded for 1928–29.

COMMONWEALTH BANK OF AUSTRALIA.—LIABILITIES, JUNE QUARTER, 1929.

States and Territories.	Bills in Circula- tion.	Balances Due to Other Banks.	Deposits.			Total Liabilities.
			Not Bearing Interest.	Bearing Interest.	Total Deposits.	
	£	£	£	£	£	£
New South Wales	71,731	3,592,367	5,714,337	2,791,164	8,505,501	12,169,599
Victoria	70,471	2,637,202	3,231,023	2,165,601	5,396,624	8,104,297
Queensland	66,888	1,094,073	5,247,360	3,741,351	8,988,711	10,149,672
South Australia	18,314	907,925	1,509,387	221,700	1,731,087	2,657,328
Western Australia	21,677	662,804	1,192,507	1,088,858	2,281,365	2,965,846
Tasmania	9,360	330,749	392,397	362,698	755,095	1,095,210
Northern Territory .. ..	..	..	..	..	..	..
Federal Capital Territory ..	214	..	192,331	41,830	234,161	234,375
Total	258,061	9,225,120	17,479,342	10,413,202	27,892,544	37,376,325

(ii) *Liabilities, all States, June Quarters, 1925 to 1929.*—The average liabilities in the years specified are given in the table below.

**COMMONWEALTH BANK OF AUSTRALIA.—LIABILITIES, JUNE QUARTER,
1925 TO 1929.**

Quarter ended 30th June—	Bills in Circula- tion.	Balances Due to Other Banks.	Deposits.				Total Liabilities.
			Not Bearing Interest.	Bearing Interest.	Savings Bank Deposits.	Total Deposits.	
	£	£	£	£	£	£	£
1925	265,936	3,940,022	23,381,481	7,828,650	39,798,481	71,008,612	75,214,570
1926	355,240	6,045,894	23,350,534	7,103,349	43,068,182	73,522,065	79,923,199
1927	258,605	7,306,854	20,435,503	8,216,302	44,212,050	72,863,855	80,429,314
1928	327,570	12,033,761	14,901,816	9,411,560	45,705,114	70,018,490	82,399,821
1929	258,661	9,225,120	17,479,342	10,413,202	..	27,892,544	37,376,325

(iii) *Assets, June Quarter, 1929.* The assets for the June Quarter, 1929, are as follows :—

COMMONWEALTH BANK OF AUSTRALIA.—ASSETS, JUNE QUARTER, 1929.

States and Territories.	Coin.	Bullion.	Australian Notes.	Government and Municipal Securities.	Landed and House Property.	Balances Due from Other Banks.	Notes and Bills of Other Banks.	Discounts, Overdrafts, and all other Assets (not including Contingent Assets).	Total Assets.
	£	£	£	£	£	£	£	£	£
N.S.W. ..	186,563	..	1,067,081	12,242,680	243,353	64,565	1,084	5,777,069	19,582,395
Victoria ..	445,878	..	1,064,020	665,231	147,810	11,361	364	3,583,588	5,918,252
Queensland ..	112,408	..	819,181	481,974	77,807	906	932	3,172,956	4,666,164
S. Australia ..	98,609	..	432,987	306,001	32,312	973	161	1,134,263	2,005,311
W. Australia ..	153,973	1,663	510,825	..	13,972	2,404	375	692,372	1,375,584
Tasmania ..	46,272	..	294,221	..	2,944	102	96	128,829	472,464
Nor. Ter. ..	..	..	..	..	..	..	..	..	..
Fed.Cap.Ter.	1,214	..	27,787	..	1,313	..	30	232,192	262,536
Total ..	1,044,917	1,663	4,216,102	13,695,886	519,511	80,311	3,042	14,721,274	34,282,706

(iv) *Assets, all States, June Quarter, 1925 to 1929.*—Particulars of the assets for the last five years are given in the following table :—

COMMONWEALTH BANK OF AUSTRALIA.—ASSETS, JUNE QUARTER, 1925 TO 1929.

Quarter ended 30th June—	Coin.	Bullion.	Australian Notes.	Government and Municipal Securities.	Landed and House Property.	Balances Due from Other Banks.	Notes and Bills of Other Banks.	Discounts, Overdrafts, and all other Assets (not including Contingent Assets).	Total Assets.
	£	£	£	£	£	£	£	£	£
1925 ..	4,675,665	2,251	14,000,587	38,811,260	943,624	3,330,693	980,030	11,950,338	74,694,448
1926 ..	6,016,703	945	12,219,139	42,278,108	848,416	2,889,718	954,635	13,113,051	78,320,715
1927 ..	1,141,600	11,209	7,092,716	52,904,863	705,070	1,580,422	2,157,966	17,043,767	82,637,613
1928 ..	755,581	51,302	4,507,681	57,057,707	644,182	142,832	2,154,022	16,697,661	82,010,968
1929 ..	1,044,917	1,663	4,216,102	13,695,886	519,511	80,311	3,042	14,721,274	34,282,706

7. Clearing Houses.—The following particulars of Clearing House returns have been furnished by the Associated Banks, Melbourne. Figures showing the weekly average clearings in each capital city are supplied by the Commonwealth Bank and published in the Quarterly Summary of Australian Statistics issued by this Bureau.

CHEQUE-PAYING BANKS.—CLEARING HOUSE RETURNS, 1925 TO 1929.

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	£	£	£	£	£	£
1925	909,114,000	803,083,000	192,968,000	171,092,000	101,085,000	25,557,000
1926	954,523,000	790,111,000	195,710,000	178,898,000	103,523,000	25,691,000
1927	1,034,894,000	825,676,000	192,274,000	186,752,000	111,454,000	26,805,000
1928	1,033,511,000	762,851,000	196,566,000	164,166,000	112,503,000	28,226,000
1929	1,043,324,000	814,668,000	195,549,000	156,685,000	114,589,000	27,364,000

§ 3. Savings Banks.

1. **General.**—In the following tables dealing with Savings Banks the figures for all the States except Tasmania refer to financial years ended 30th June. In the case of Tasmania, figures for the two trustee savings banks are made up to the last day of August, except for the year 1929, when the particulars relate to 30th June. The figures in each State are inclusive of the Savings Bank Department of the Commonwealth Bank.

2. **Accounts Open.**—The number of accounts open, not of individual depositors, and the number per 1,000 of the population, at 30th June in each of the last five years are shown in the following table:—

SAVINGS BANKS.—ACCOUNTS OPEN, 1925 TO 1929.

30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	All States.
NUMBER.									
1925 ..	1,370,401	1,337,093	397,710	470,599	278,071	135,423	911	4,575	3,994,783
1926 ..	1,440,688	1,396,438	420,908	489,148	292,353	138,993	978	5,744	4,185,250
1927 ..	1,599,912	1,455,581	438,282	512,332	309,546	142,028	1,197	6,580	4,465,458
1928 ..	1,689,280	1,515,097	458,060	530,382	330,284	156,091	1,349	7,876	4,688,419
1929 ..	1,799,708	1,575,089	480,160	553,647	350,046	168,939	1,308	8,531	4,937,428

PER 1,000 OF POPULATION.

1925 ..	600	800	465	866	756	604	242	921	678
1926 ..	602	824	479	876	779	665	259	893	692
1927 ..	674	843	490	897	804	744	281	874	724
1928 ..	697	866	502	917	825	743	337	984	746
1929 ..	781	891	518	955	850	795	314	1,023	775

In connexion with the number of accounts open per 1,000 of the population, it must be borne in mind that savings bank accounts are not restricted to adults, since many accounts are opened in the names of children. The proportion, notwithstanding, is a very large one, amounting in the case of Australia to three-quarters and rising in Victoria to almost nine-tenths and in South Australia to 95 per cent. of the population. As it is possible in some States for the same person to have accounts in both Commonwealth and State Savings Banks, the figures given are somewhat in excess of the number of individual depositors. Allowance must also be made for the fact that the funds of various societies, small trust funds, etc., are sometimes deposited in Savings Banks.

3. **Deposits.**—The deposits in Australia reached in 1929 the large sum of £225,485,704, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits. While not granting facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, and in addition allow interest on the minimum monthly balance instead of charging a small fee for keeping the account, as is the practice of the ordinary banks. All the Savings Banks have a reciprocal arrangement, under which money deposited in one State may be drawn out in another State, even by telegraph.

The table below shows the amount at credit of depositors, the average per account open, and the average amount deposited per head of population at the end of each of the last five years :—

SAVINGS BANKS.—DEPOSITS, 1925 TO 1929.

30th June-	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	All States.
TOTAL.									
1925	£ 69,016,630	£ 59,551,895	£ 21,339,901	£ 20,152,175	£ 8,303,933	£ 4,509,842	£ 32,961	£ 132,803	£ 183,040,140
1926	73,629,455	63,253,525	22,836,909	21,778,970	8,969,824	4,772,780	36,577	178,195	195,456,235
1927	78,145,643	65,352,619	22,452,749	23,600,897	9,694,396	5,079,274	48,025	206,090	204,579,693
1928	81,627,667	68,826,768	23,324,829	24,941,688	10,645,373	5,522,766	64,617	234,754	215,188,462
1929	85,727,513	72,706,991	24,075,504	25,223,402	11,603,190	5,811,458	47,291	279,355	225,485,704

AVERAGE PER SAVINGS BANK ACCOUNT.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1925	50 7 3	44 10 9	53 13 2	42 16 5	29 17 8	33 6 0	36 3 8	29 0 6	45 16 3
1926	51 2 2	45 5 11	54 5 1	44 10 6	30 13 8	34 6 9	38 0 0	31 0 5	46 14 0
1927	48 16 10	44 17 11	51 4 7	46 1 4	31 6 4	35 15 3	40 2 5	31 6 5	45 16 3
1928	48 6 5	45 7 11	50 18 5	47 0 6	32 4 7	35 7 8	47 18 0	29 16 2	45 18 0
1929	47 12 8	46 3 3	50 2 10	45 11 4	33 8 4	34 8 0	36 3 1	32 14 11	45 13 4

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1925	30 7 8	35 12 10	24 19 1	37 2 1	22 11 3	21 5 8	8 15 0	26 14 5	30 17 5
1926	31 15 7	37 6 7	25 19 5	38 19 11	23 18 2	22 15 11	9 13 10	27 13 5	32 6 9
1927	32 19 3	37 17 1	25 2 1	41 6 10	25 3 7	24 8 0	11 5 6	27 5 3	33 3 5
1928	33 13 9	39 6 10	25 11 8	43 3 5	26 12 8	26 4 10	15 4 4	29 6 1	34 4 10
1929	34 16 3	41 2 8	25 19 5	43 10 10	28 3 11	27 6 11	11 6 10	33 10 3	35 7 7

4. Rates of Interest.—The rates of interest allowed, and the limits of interest-bearing deposits, are as follows :—New South Wales Government Savings Bank, 4 per cent. up to £500 and $3\frac{1}{2}$ per cent. on the excess up to £1,000; Victoria, 4 per cent. up to £1,000, also $4\frac{1}{2}$ per cent. on deposit stock up to £1,000; South Australia, 4 per cent. on accounts closed during the year, and $4\frac{3}{4}$ per cent. up to £500, thence $4\frac{1}{2}$ per cent. to £1,000 on accounts remaining open; Western Australia, $3\frac{1}{2}$ per cent. on current accounts to £1,000, thence 3 per cent. on to the interest bearing limit of £1,500 and $4\frac{1}{2}$ per cent. on deposits for one year up to £1,000; Hobart Trustees' Savings Bank, $4\frac{1}{2}$ per cent. up to £300; Launceston Trustees' Savings Bank, $4\frac{1}{2}$ per cent. up to £300; and Commonwealth Savings Bank, in all States except Queensland where no State Savings Bank is in existence, 4 per cent. on the first £500, $3\frac{1}{2}$ per cent. on the next £500, and 3 per cent. upon another £300. In Queensland, the rate is 4 per cent. for the first £500 and $3\frac{1}{2}$ per cent. on the excess up to £2,000.

5. Annual Business.—The business transacted by the savings banks is very large when compared with the total amount of deposits. This is of course due to the fact that many accounts are used as convenient current accounts. Thus, during the last year of the period under review, the total amount deposited and withdrawn (exclusive of interest added) was almost double the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased by more than 5 per cent. during the same year. The following table shows the business transacted during the year 1928-29 :—

SAVINGS BANKS.—TRANSACTIONS, 1928-29.

States and Territories.	Total Deposits at end of Year 1927-28.	Amounts Deposited during Year 1928-29.	Interest Added during Year 1928-29.	Total.	Amounts Withdrawn during Year 1928-29.	Total Deposits at end of Year 1928-29.
	£	£	£	£	£	£
New South Wales ..	81,627,667	81,581,622	3,042,085	166,251,374	80,528,861	85,727,513
Victoria ..	68,826,768	61,711,646	2,613,042	133,151,456	60,444,465	72,706,991
Queensland ..	23,324,829	24,620,803	844,971	48,790,663	24,715,159	24,075,504
South Australia ..	24,041,688	17,319,231	1,087,279	43,348,198	18,119,796	25,228,402
Western Australia ..	10,645,373	13,576,246	400,600	24,622,219	13,013,029	11,609,190
Tasmania ..	5,380,082	4,432,198	217,386	10,029,666	4,218,208	5,811,458
Northern Territory ..	64,617	52,875	1,793	119,285	71,994	47,291
Federal Cap. Territory	234,754	359,512	9,106	603,372	324,017	279,355
Total ..	215,045,778	203,654,193	8,216,262	426,916,233	201,430,529	225,485,704

6. Commonwealth Savings Bank.—The figures in the preceding tables include those relating to the Savings Bank Department of the Commonwealth Bank, which commenced operations in Victoria on the 15th July, 1912, in Queensland on the 16th September, 1912, in the Northern Territory on the 21st October, 1912, and in the States of New South Wales, South Australia, and Western Australia on the 13th January, 1913. Extensive use is made of the country post-offices as local agencies.

The Commonwealth Bank absorbed the Tasmanian State Savings Bank in January, 1913, on terms set out in Official Year Book No. 6. The transfer of the Queensland Savings Bank was effected in 1920.

The following table gives the number of accounts, and the amount at credit on 30th June, 1929, at the various branches of the Commonwealth Savings Bank :—

COMMONWEALTH SAVINGS BANK, 30th JUNE, 1929.

Locality.	Number of Accounts.	Amount at Credit.
	£	£
New South Wales	368,085	11,832,307
Victoria	188,453	6,577,350
Queensland	480,160	24,075,504
South Australia	65,105	2,296,777
Western Australia	95,890	3,214,231
Tasmania	67,845	1,801,289
Northern Territory	1,308	47,291
Federal Capital Territory	7,444	213,882
Total, Australia	1,274,290	50,058,631
Papua and New Guinea	2,589	112,583
London	4,159	434,141
Grand Total	1,281,038	50,605,355

As mentioned in §2 (page 289), the Commonwealth Savings Bank Department was from 9th June, 1928, separated from the General Bank.

§ 4. Companies.

1. General.—Statistics available in regard to registered companies embrace (a) Returns relating to Trustees, Executors and Agency Companies; (b) Returns relating to Registered Building and Investment Societies; and (c) Returns relating to Registered Co-operative Societies.

2. Trustees, Executors and Agency Companies.—Returns are available for eight Victorian, two New South Wales, one Queensland, four South Australian, two Western Australian and three Tasmanian companies. The paid-up capital of these twenty companies amounted to £1,278,452; reserve funds and undivided profits to £938,846; other liabilities, £465,128; total liabilities, £2,682,426. Among the assets are included—Deposits with Governments, £217,530; other investments in public securities, fixed deposits, etc., £632,769; loans on mortgage, £435,499; property owned, £858,086; other assets, £538,542. Of the twenty companies, ten show the total amount of the estates, etc., under administration, the total for 1929 being approximately £114,858,500.

In respect of the twenty companies, net profits for the year totalled £211,380, of which £147,657 was paid in dividends.

3. Registered Building and Investment Societies.—(i) *General*. Returns have been received relating to 216 societies, but the information is not exhaustive, as particulars regarding unimportant organizations are not included.

REGISTERED BUILDING AND INVESTMENT SOCIETIES.—SUMMARY, 1928.

Particulars.	N.S.W. 1927-28.	Vic. 1923.	Q'land. 1927-28.	S. Aust. 1923.	W. Aust. 1927-28.	Tas. 1923.	Total.
Societies making returns—							
Permanent ..	7	26	10	8	5	4	216
Terminating ..	133						
Number of shareholders ..	c 2,550	9,822	6,542	19,208	13,696	4,359	56,177
Number of shares ..	c 28,849	(a)	1,547,604	74,230	36,722	39,397	61,726,802
Number of borrowers ..	c 4,694	12,171	4,961	3,155	2,430	1,504	28,915
Income for year from interest ..	£ 198,898	390,574	73,805	39,680	44,658	43,879	791,494
Working expenses for year ..	£ 154,212	173,693	11,721	16,390	36,704	5,904	398,624
Amount of deposits during year ..	£ 488,758	1,881,671	193,545	33,483	261,854	34,874	2,894,185
Repayment of loans during year ..	£ 771,089	1,116,839	204,220	159,318	180,360	113,005	2,544,831
Loans granted during year ..	£ 850,940	849,197	266,579	175,209	267,672	128,374	2,537,971

(a) Not available.

(b) Exclusive of Victoria.

(c) Permanent societies only.

(ii) *Liabilities and Assets*. The balance-sheets of the companies in respect of which particulars of liabilities and assets are stated hereunder cover periods ended during the year 1928. The figures quoted for the States of New South Wales, South Australia and Tasmania refer to the calendar year 1928, while those for the remaining States are for the fiscal year 1927-28.

REGISTERED BUILDING AND INVESTMENT SOCIETIES.—LIABILITIES, 1928.

State.	Paid-up Capital or Subscriptions.	Reserve Funds.	Deposits.	Bank Overdrafts and other Liabilities.	Total Liabilities.
	£	£	£	£	£
New South Wales ..	2,969,952	654,708	588,366	73,037	4,286,063
Victoria ..	2,001,301	693,473	1,819,996	347,521	4,862,291
Queensland ..	1,051,496	41,526	6,524	88,921	1,188,467
South Australia ..	734,869	88,109	36,250	31,169	890,397
Western Australia ..	616,503	..	108,766	25,468	750,737
Tasmania ..	274,924	89,062	238,072	11,376	613,434
Total ..	7,649,045	1,566,878	2,797,974	577,492	12,591,389

REGISTERED BUILDING AND INVESTMENT SOCIETIES.—ASSETS, 1928.

State.	Advances on Mortgage.	Landed and House Pro- perty, Furni- ture, etc.	Cash in hand and on Deposit and other Assets.	Total Assets.
	£	£	£	£
New South Wales ..	3,632,313	82,018	571,732	4,286,063
Victoria ..	4,592,756	126,124	143,411	4,862,291
Queensland ..	1,109,875	47,642	30,950	1,188,467
South Australia ..	815,172	23,999	51,226	890,397
Western Australia ..	713,415	14,206	23,116	750,737
Tasmania ..	527,733	10,390	75,311	613,434
Total ..	11,391,264	304,379	895,746	12,591,389

4. Co-operative Societies.—(i) *General*. The returns relating to Co-operative Societies have been divided into two classes—(i) those engaged in the manufacture and marketing of primary products and trade requirements, and (ii) those engaged in retailing general household requirements. The former may be described briefly as Producers'

Co-operative and the latter as Consumers' Co-operative Societies. The following table shows the number of societies, the membership, and the financial results for the year 1928. The particulars given for New South Wales relate to societies registered under the Co-operation Acts 1923-1929, while in respect of Western Australia, particulars of four Producers' Societies which are also Consumers' Societies are included under the former heading only.

CO-OPERATIVE SOCIETIES.—NUMBER, MEMBERSHIP AND TRADING RESULTS, 1928.

Heading.	N.S.W. 1927-28.	Vic. 1927-28.	Qld. 1927-28.	S.A. 1928.	W.A. 1927-28.	Tas. 1927-28.	All States.
Producers' Co-operative Societies—							
Number of societies ..	81	62	58	29	7	12	249
Membership ..	23,487	40,571	35,979	6,324	8,778	5,249	120,388
Gross turnover (Sales) £	5,652,472	8,163,375	7,451,676	554,630	1,522,246	345,305	23,689,704
Total income .. £	5,701,230	8,503,591	7,531,289	605,656	1,919,113	371,772	24,632,651
Total working expenses (a) £	5,685,439	8,389,754	6,127,548	632,598	1,898,849	361,876	18,241,064
Rebates and bonuses £		5,658	414,356	9,340	21,451		450,805
Dividends on share capital £	11,058	25,752	17,636	10,536	19,165	2,429	86,576
Rate per cent. ..	2.9	2.8	3.4	5.9	8.1	3.0	4.2
Consumers' Co-operative Societies—							
Number of Societies ..	45	45	7	9	60	8	169
Membership ..	57,775	15,740	29,709	37,676	8,177	480	149,557
Gross turnover (Sales) £	3,840,014	1,362,977	57,172	1,478,875	624,668	88,149	7,751,555
Total income .. £	3,911,086	1,386,458	292,635	1,486,221	985,856	88,650	8,150,956
Total working expenses (a) £	3,522,007	1,315,908	618,520	1,390,735	855,803	73,337	7,342,991
Rebates and bonuses £	337,103	39,722	42,289	51,516	17,772	1,331	489,733
Dividends on share capital £	49,780	10,525	448	30,645	8,525	414	100,337
Rate per cent. ..	5.1	5.1	0.3	5.1	5.0	2.0	4.8

(a) Includes payments to suppliers.

(b) Exclusive of payments to suppliers.

(ii) *Liabilities and Assets.* The next table gives the liabilities and assets.

CO-OPERATIVE SOCIETIES.—LIABILITIES AND ASSETS, 1928.

Heading.	N.S.W. 1927-28.	Vic. 1927-28.	Q'land. 1927-28.	S.A. 1928.	W.A. 1927-28.	Tas. 1927-28.	All States.
Producers' Co-operative Societies—	£	£	£	£	£	£	£
Liabilities—							
Paid-up capital ..	385,488	933,179	514,959	177,458	235,664	80,055	2,326,803
Loan capital ..	(a) 974,078	236,196	82,359	191,157	157,730	30,905	2,945,530
Overdraft ..		831,585	128,905	99,942	187,242	25,371	
Reserves and undivided profits ..	302,954	396,715	362,804	115,409	176,569	24,277	1,378,723
Other liabilities ..	...	391,576	542,235	155,720	227,510	58,677	1,375,718
Total liabilities ..	1,662,520	2,789,251	1,631,322	739,686	984,715	219,285	8,026,779
Assets—							
Land, buildings, and plant	872,623	1,187,562	845,634	325,230	207,287	115,545	3,553,881
Stocks ..	299,404	614,142	315,977	256,830	208,997	35,203	1,730,553
Other assets ..	490,493	987,547	469,711	157,626	568,431	68,537	2,742,345
Total assets ..	1,662,520	2,789,251	1,631,322	739,686	984,715	219,285	8,026,779
Consumers' Co-operative Societies—							
Liabilities—							
Paid-up capital ..	977,627	207,113	129,448	597,974	168,873	20,555	2,101,590
Loan capital ..	365,096	67,806	15,497	173,897	12,537	2,585	858,009
Overdraft ..		128,299	2,531	30,994	55,779	2,388	
Reserves and undivided profits ..	444,460	177,837	18,432	182,008	139,417	9,784	971,947
Other liabilities ..	...	183,405	349,277	38,520	130,470	15,204	671,876
Total liabilities ..	1,787,792	719,460	515,185	1,023,393	507,076	50,516	4,603,422
Assets—							
Land, buildings, and plant	804,211	258,952	145,842	336,194	113,763	16,916	1,675,878
Stocks ..	501,190	212,150	16,511	338,214	160,170	17,537	1,245,772
Other assets ..	482,391	248,358	352,832	348,985	233,143	16,063	1,681,772
Total assets ..	1,787,792	719,460	515,185	1,023,393	507,076	50,516	4,603,422

(a) Includes sundry creditors.

§ 5. Life Assurance.

[NOTE.—A Conspectus of Australian Life Assurance Legislation was published in Official Year Book No. 18, 1925, in Chap. XXVII. "Miscellaneous."]

1. **General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to "insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned." With the exception of Act No. 12 of 1905, "An Act relating to assurance on the lives of children by life assurance companies or societies," no legislation relating to life assurance has been passed by the Commonwealth Parliament, and life assurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies or special Acts.

Returns for the year 1928 have been collected from life assurance societies, with results which are in the main satisfactory. The figures below refer to Australian business only.

2. **Companies Transacting Business.**—(i) *General.* The number of companies transacting life assurance business in Australia during 1928 was 36, of which the full name and location of head office are set out in the Finance Bulletin, No. 20, for 1928-29.

Of the thirty-three Australian companies seven are purely mutual, and twenty-five are proprietary companies with a paid-up capital aggregating £2,165,386, part of which is, however, used in fire, marine, and accident insurance business. One office is a State government institution. Three oversea companies transacted business in Australia in 1928, one being mutual and two proprietary companies.

(ii) *Ordinary and Industrial Business.* Of the societies enumerated in the preceding paragraph, fifteen transacted both ordinary and industrial business and one society industrial business only. Ordinary and industrial business have, where possible, been kept separate, while figures relating to companies whose head offices are in New Zealand or in Europe or America have been restricted to the Australian business.

3. **Australian Business, 1928.**—(i) *Ordinary.* The subjoined table shows the ordinary life business in force for each of the last five years. While the total sum assured has increased by 52 million pounds (23 per cent.), the average per policy has increased from £273 to £311. The amount assured in 1928 represents an average of approximately £44 per head of population.

ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS, 1924 TO 1928.

Year.			Policies in Force.	Amount.	Average per Policy.	Annual Premium Income.
			No.	£	£	£
1924	..	..	820,138	224,129,981	273	7,434,514
1925	..	..	834,936	235,687,567	282	7,835,501
1926	..	..	848,427	248,549,883	293	8,248,511
1927	..	..	866,710	262,276,366	303	8,532,723
1928	..	..	889,521	276,391,009	311	9,154,560

(ii) *Industrial.* Information in regard to the industrial business of the sixteen societies transacting it is given in the following table.

The amount assured has increased by over 20 million pounds (46 per cent.) in the period under review. The average amount per policy in 1928 was £42, compared with an average of £37 in 1924.

INDUSTRIAL LIFE INSURANCE.—AUSTRALIAN BUSINESS, 1924 TO 1928.

Year.	Policies in Force.	Amount.	Average per Policy.	Annual Premium Income.
	No.	£	£	£
1924	1,233,925	45,256,580	37	2,635,613
1925	1,310,642	49,907,583	38	2,871,799
1926	1,395,744	54,990,807	39	3,167,523
1927	1,481,044	60,732,865	41	3,524,919
1928	1,564,081	65,966,754	42	3,884,416

4. *Income and Outgo.*—(i) *Ordinary Business.* The following table shows the aggregate Australian income for the last four years of all the societies doing business in Australia. In the latter year premiums—new and renewal—amounted to 57 per cent., and interest, dividends, and rent to nearly 33 per cent. of the Australian income.

ORDINARY LIFE ASSURANCE.—AUSTRALIAN INCOME, 1925 TO 1928.

Heading.	Amount.			
	1925.	1926.	1927.	1928.
	£	£	£	£
Premiums—New	1,049,159	1,047,965	1,027,378	1,133,529
Renewal	6,786,342	7,200,546	7,505,345	8,021,031
Consideration for annuities	57,378	81,083	62,766	83,941
Interest, dividends, and rents	4,818,124	5,217,666	5,611,813	6,070,259
Other receipts	875,609	307,558	244,769	686,337
Total income	13,586,612	13,854,818	14,452,071	15,995,097

In 1928 outgo amounted to £8,956,362, of which claims accounted for 56 per cent., surrenders nearly 12 per cent., expenses of management 11 per cent., and commission 8 per cent.

ORDINARY LIFE ASSURANCE.—AUSTRALIAN OUTGO, 1925 TO 1928.

Heading.	Amount.			
	1925.	1926.	1927.	1928.
	£	£	£	£
Claims	4,379,233	4,596,541	4,936,336	4,990,017
Surrenders	920,675	1,055,957	975,115	1,049,259
Annuities	99,662	102,280	103,990	101,752
Commission	718,346	720,780	691,972	752,344
Expenses of management	838,455	846,847	883,879	963,876
Licence fees and taxes	131,861	149,501	175,902	186,952
Shareholders' dividends	68,480	87,806	74,080	78,263
Cash bonuses paid to shareholders	362,041	380,461	444,322	483,033
All other expenses	250,642	241,598	190,755	350,866
Total outgo	7,769,395	8,181,771	8,476,351	8,956,362

The excess of income over outgo during the past four years was as follows:—1925, £5,817,217; 1926, £5,673,047; 1927, £5,975,720; and 1928, £7,038,735.

(ii) *Industrial Business.* The aggregate Australian income for the years 1925 to 1928 of societies transacting industrial business was as follows:—

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN INCOME, 1925 TO 1928.

Heading.	Amount.			
	1925.	1926.	1927.	1928.
	£	£	£	£
Premiums—New and renewal ..	2,871,799	3,167,523	3,524,919	3,884,416
Consideration for annuities ..	13	13	13	13
Interest, dividends, and rents ..	700,936	801,891	914,468	981,444
Other receipts	22,699	27,755	21,812	17,328
Total income ..	3,595,447	3,997,182	4,461,212	4,883,201

Outgo during 1928 totalled £3,029,204. Claims amounted to 42 per cent., commission 31 per cent., and expenses of management 15 per cent.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN OUTGO, 1925 TO 1928.

Heading.	Amount.			
	1925.	1926.	1927.	1928.
	£	£	£	£
Claims	731,480	926,399	1,170,393	1,278,853
Surrenders	95,658	109,398	125,638	150,508
Annuities	295	295	295	254
Commission	699,452	779,472	847,891	944,909
Expenses of management	379,905	402,211	456,872	464,057
Licence fees and taxes	23,649	24,817	31,478	33,549
Shareholders' dividends	60,742	64,676	67,762	70,034
Cash bonuses paid to shareholders .. ..	..	..	4,049	..
All other expenses	87,346	70,709	56,125	87,040
Total outgo	2,078,527	2,377,977	2,760,503	3,029,204

The excess of income over outgo for each of the past four years was :—1925, £1,516,920; 1926, £1,619,205; 1927, £1,700,709; and 1928, £1,853,997.

5. *Liabilities and Assets, 1928.*—(i) *General.* The liabilities of the Australian societies consist mainly of their assurance funds; as already mentioned, however, some of the societies are proprietary, and in these cases there is a further liability on account of the shareholders' capital. The assets consist chiefly of loans on mortgage and policies, government, municipal, and similar securities, shares, freehold property, etc. Loans on personal security are granted by very few of the Australian societies.

(ii) *Ordinary and Industrial Business.*—For various reasons several societies do not attempt the division of liabilities and assets between the industrial and ordinary branches, and a few societies cannot state the amount of liabilities in Australia. In the following table, therefore, the figures relate to both branches.

ORDINARY AND INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN LIABILITIES, 1925 TO 1928.

Heading.	Amount.			
	1925.	1926.	1927.	1928.
	£	£	£	£
Shareholders' capital, paid up ..	1,842,963	1,891,916	1,978,098	1,965,386
Assurance and annuity funds ..	66,119,414	72,307,626	78,419,126	85,295,617
Other funds	6,018,968	6,609,019	7,409,078	8,330,742
Claims admitted but not paid ..	799,584	772,088	846,112	391,849
All other liabilities	1,809,185	2,188,288	2,192,928	2,619,086
Total Australian liabilities (a) ..	76,590,114	83,768,937	90,845,342	99,102,680

(a) Excluding Mutual Life and Citizens, National Mutual, Western Australian, Liverpool and London and Globe, and Mutual Life of United States.

Assets for the years specified are set out in detail in the table hereunder:—

**ORDINARY AND INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN ASSETS,
1925 TO 1928.**

Heading.	Amount.			
	1925.	1926.	1927.	1928.
	£	£	£	£
Government and municipal securities ..	55,512,895	60,354,135	62,202,524	65,206,148
Mortgages	22,521,893	24,146,487	29,144,316	32,378,820
Loans on companies' policies	9,812,751	10,543,370	11,576,592	12,644,271
Railway debentures and stock	935,207	986,980	1,129,003	35,479
Landed and house property	3,605,283	4,081,973	4,467,563	4,944,345
Life interests and reversions	148,447	149,555	204,552	143,710
Other investments	1,512,833	1,631,647	1,541,302	3,054,276
Outstanding premiums	772,918	879,137	963,851	1,001,740
Outstanding interest, dividends, and rents ..	895,096	974,735	1,142,496	1,303,410
Cash	2,138,263	2,131,936	2,570,576	2,724,952
Establishment and organization accounts ..	1,016,751	1,221,472	1,288,052	1,320,700
All other assets	1,709,996	1,923,921	2,043,220	2,286,136
Total Australian assets ..	100,582,333	109,025,348	118,274,047	127,043,987

(iii) *Total Assets.* It has been thought advisable to restrict the figures relating to life assurance to business in Australia. Several of the companies whose head offices are in Australia transact, however, a large amount of business elsewhere, viz., in New Zealand, in South Africa, and in the United Kingdom, while in the case of the foreign companies, the Australian business is insignificant compared with that done elsewhere. Particulars as to this foreign business of both Australian and foreign companies will be found in "Finance Bulletin No. 20."

The total assets of all life companies operating in Australia amounted to £380,387,435, in 1928, of which government and municipal securities (£115,845,776) and mortgages (£86,347,697) represented more than 50 per cent.

6. *New Policies issued in Australia, 1928.*—(i) *Ordinary Business.* During 1928 91,483 new policies were issued for £34,466,397. The average amount per policy was £377, which compares with an average of £311 per policy for all policies which were in existence in 1928.

(ii) *Industrial Business.* New policies to the number of 318,386 were issued during the year for a total of £16,123,313. The average per policy was almost £51, which is 21 per cent. more than the average for all industrial policies which were current in 1928.

7. *Policies Discontinued in Australia, 1926, 1927 and 1928.*—(i) *Ordinary Business.* The volume of business which from various causes becomes void in each year is always large. The number and amount of policies discontinued in the last three years, and the reasons for discontinuance are given in the following table:—

**ORDINARY LIFE ASSURANCE.—POLICIES DISCONTINUED IN AUSTRALIA,
1926 TO 1928.**

Mode.	1926.		1927.		1928.	
	No. of Policies.	Amount.	No. of Policies.	Amount.	No. of Policies.	Amount.
		£		£		£
Death or maturity ..	15,248	3,494,636	15,965	3,703,588	16,027	3,695,861
Surrender	20,857	4,407,146	15,120	3,697,414	16,294	4,477,050
Forfeiture	35,107	10,607,440	33,770	10,957,429	34,527	11,776,201
Total ..	71,212	18,509,222	64,855	18,358,431	66,848	19,949,112

(ii) *Industrial Business.* The number of policies discontinued in this branch each year is also very large. Of the total amount of discontinuance during 1928 only 13 per cent. was due to death or maturity, while 83 per cent. was due to forfeiture.

INDUSTRIAL LIFE ASSURANCE.—POLICIES DISCONTINUED IN AUSTRALIA, 1926 TO 1928.

Mode.	1926.		1927.		1928.	
	No. of Policies.	Amount.	No. of Policies.	Amount.	No. of Policies.	Amount.
		£		£		£
Death or maturity ..	41,778	935,690	52,021	1,182,281	53,624	1,282,137
Surrender ..	7,339	343,432	7,632	355,071	9,158	448,426
Forfeiture ..	144,802	7,166,472	150,580	7,612,505	169,921	8,978,480
Total ..	193,919	8,445,594	210,233	9,149,857	232,703	10,709,043

8. *Conspectus of Australian Life Assurance Legislation.*—A conspectus of Australian Life Assurance Legislation appeared in Official Year Book No. 18, pp. 1041 to 1059, but considerations of space preclude its insertion in the present issue.

§ 6. Fire, Marine, and General Insurance.

1. *Australasian Business.*—(i) *General.* Returns are available showing the revenue and expenditure, assets and liabilities, and investments of 42 insurance companies having their head offices either in Australia, New Zealand, or Fiji.

(ii) *Revenue and Expenditure.* The most important items of revenue and expenditure are given below. The trade surplus in 1928–29 was £515,692, or 6.20 per cent. of premium income.

FIRE, MARINE, AND GENERAL INSURANCE COMPANIES.—SUMMARY OF REVENUE AND EXPENDITURE, 1925 TO 1929.

Heading.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
	£	£	£	£	£
Premiums, less re-insurances ..	6,558,823	7,249,917	8,432,000	8,412,080	8,321,762
Losses ..	3,452,351	3,993,076	4,881,671	5,016,717	4,993,394
Expenses, commission, and taxes ..	2,414,946	2,614,007	2,727,885	2,833,854	2,812,676
Trade surplus ..	691,526	642,834	815,444	561,509	515,692
Interest, rent, etc. ..	680,875	682,957	756,897	783,969	779,314
Total surplus ..	1,372,401	1,325,791	1,572,341	1,345,478	1,295,006
Dividends and Bonuses paid ..	590,412	620,812	607,961	641,085	659,704
Ratio to premium income of—					
(a) Losses .. per cent.	52.64	55.08	57.98	59.64	60.00
(b) Expenses, etc. .. per cent.	36.82	36.05	32.35	33.69	33.80
(c) Trade surplus .. per cent.	10.54	8.87	9.67	6.68	6.20

(iii) *Liabilities and Assets.* The liabilities and assets for the same period are set out in the following tables. Comparison of the results for 1928–29 with those for 1924–25 shows that paid-up capital increased by 10 per cent. and reserves by 48 per cent. While loans on mortgage decreased by 25 per cent., Government securities increased by 30 per cent., and landed and other property showed a growth of 34 per cent.

FIRE, MARINE, AND GENERAL INSURANCE COMPANIES, 1925 TO 1929.

Heading.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
PAID-UP CAPITAL, RESERVES, AND LIABILITIES.					
	£	£	£	£	£
Paid-up capital	5,851,076	6,131,149	6,292,050	6,400,284	6,423,425
Reserves and re-insurance funds (a) ..	6,784,411	7,401,536	8,637,831	9,487,950	10,048,875
Undivided profits	645,024	664,181	706,528	612,827	766,041
Losses unsettled	852,267	913,982	987,670	988,700	935,219
Sundry creditors, etc. ..	2,216,401	2,436,815	2,309,610	2,379,748	2,417,780
Dividends, etc., to pay ..	350,057	384,029	384,006	387,887	405,109
Life assurance funds (b) ..	1,867,294	2,208,553	1,436,372	1,706,108	2,008,769
Total liabilities ..	18,566,530	20,140,245	20,754,067	21,963,504	23,005,218
INVESTMENTS AND OTHER ASSETS.					
	£	£	£	£	£
Loans on mortgage	1,017,259	1,175,228	727,850	759,382	768,378
Government securities, etc. ..	10,231,700	10,989,880	12,004,751	12,668,290	13,331,925
Landed and other property ..	2,644,736	2,908,637	2,841,654	3,307,205	3,550,460
Fixed deposit, etc.	1,403,416	1,467,234	1,929,271	1,828,566	1,850,771
Loans on life policies (b) ..	46,989	60,533	62,451	84,871	104,175
Investments	121,363	165,153	139,055	234,321	239,496
Cash and bills receivable ..	868,604	899,232	763,272	757,970	769,923
Sundry debtors and other assets ..	2,232,463	2,474,348	2,285,763	2,322,899	2,390,090
Total assets ..	18,566,530	20,140,245	20,754,067	21,963,504	23,005,218

(a) Including amount required as reserves against unexpired risks.

(b) Some of the companies transact Life Business.

(iv) *Marine Insurance.* Separate returns regarding this branch of insurance are not available. Act No. 11 of 1909, "An Act relating to Marine Insurance," passed by the Commonwealth Parliament, and assented to on the 11th November, 1909, altered the conditions under which marine policies had up till then been issued.

§ 7. Friendly Societies.

1. *General.*—Friendly societies are an important factor in the social life of the community, as probably one-third of the total population of Australia comes either directly or indirectly under their influence. Their total membership approaches 600,000 but as certain benefits, such as medical attendance and free medicines, and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by about four to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its proposed rules are conformable to the law, and that the scale of contribution is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and reports are published in most of the States dealing with the returns thus received.

In the following tables the figures for South Australia and Tasmania are for the calendar year 1928, while those for the other States relate to the fiscal year 1927-28.

2. **Number of Societies, Lodges, and Members.**—The number of different societies and lodges, the total number of benefit members at the end of the year, and their average number during the year are shown in the following table :—

FRIENDLY SOCIETIES.—SOCIETIES, LODGES, AND MEMBERS, 1928.

State.	Year ended—	Number of Registered Friendly Societies.	Number of Lodges.	Benefit Members at end of year.	Average No. of Benefit Members during the year.
New South Wales	30.6.28	33	2,413	242,199	240,363
Victoria.. ..	"	59	1,481	161,850	161,130
Queensland	"	18	(a) 578	67,057	66,852
South Australia ..	31.12.28	17	699	78,284	78,353
Western Australia	30.6.28	14	341	23,509	23,265
Tasmania	31.12.28	20	186	24,958	25,016
Total	—	—	5,698	597,857	594,979

(a) Excluding Juvenile Branches.

With regard to the number of registered Friendly Societies no total is given for Australia, since many of the societies operate in all the States.

3. **Sickness and Death Returns.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shows the total number of members who received sick pay during the year, the number of weeks for which they received pay in the aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members :—

FRIENDLY SOCIETIES.—SICKNESS AND DEATH RETURNS, 1928.

State.	Year ended—	Number of Members who received Sick Pay.	Total Number of Weeks Sick Pay Granted.	Average Number of Weeks per Member Sick.	Deaths of Benefit Members and Wives.	Proportion of Deaths to 1,000 Average Benefit Members.
New South Wales	30.6.28	52,130	(a)	(a)	(a)	(a)
Victoria	"	31,202	315,827	10.12	2,088	12.96
Queensland	"	11,114	99,173	8.92	553	8.27
South Australia ..	31.12.28	14,173	155,348	10.96	1,110	14.17
Western Australia	30.6.28	4,571	36,189	7.92	188	8.08
Tasmania	31.12.28	4,931	42,550	8.63	366	14.63
Total	—	118,121	(b) 649,087	(b) 9.84	(b) 4,305	(b) 12.14

(a) Not available.

(b) Exclusive of New South Wales.

4. **Revenue and Expenditure.**—(i) *Revenue.* The financial returns are not prepared in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings :—

FRIENDLY SOCIETIES.—REVENUE, 1928.

State.	Year ended—	Entrance Fees, Members' Contributions, and Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
		£	£	£	£
New South Wales	30.6.28	808,887	205,222	60,836	1,074,945
Victoria.. ..	"	550,557	251,488	149,655	951,700
Queensland	"	235,109	81,997	(a)	317,106
South Australia ..	31.12.28	250,772	121,896	44,503	417,171
Western Australia	30.6.28	74,315	22,974	37,779	135,068
Tasmania	31.12.28	86,048	21,554	13,257	120,859
Total .. ..	..	2,005,688	705,131	306,030	3,016,849

(a) Included in interest, dividends, and rents.

(ii) *Expenditure.* The returns relating to expenditure are more complete than those for revenue. The figures show that the excess of revenue for the year was £614,913 for Australia. The revenue exceeded the expenditure by more than one pound per average benefit member.

FRIENDLY SOCIETIES.—EXPENDITURE, 1928.

State.	Year ended—	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members and Members' Wives.	Adminis-tration.	All other Expendi-ture.	Total Expendi-ture.
		£	£	£	£	£	£
New South Wales	30.6.28	307,321	329,816	75,460	156,444	33,585	902,626
Victoria ..	"	198,205	222,146	36,221	108,733	141,984	707,289
Queensland ..	"	70,879	96,075	28,372	53,541	(a)	248,867
South Australia ..	31.12.28	93,276	100,420	38,086	52,766	27,805	312,353
Western Australia	30.6.28	26,614	27,825	5,657	22,727	39,077	121,900
Tasmania ..	31.12.28	32,560	26,472	19,700	18,752	11,417	108,901
Total ..	—	728,855	802,754	203,496	412,963	253,868	2,401,936

(a) Included in administration.

It appears from the above figures that sick pay averaged about 22s. 7d. per week per average benefit member, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to about 26s. per average benefit member.

5. *Funds.*—The two foregoing tables show that the surplus of revenue over expenditure in all States amounted to £614,913 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and at the end of the year 1928 the total funds of friendly societies amounted to £12,957,679, (£21 14s. per benefit member), of which approximately £12,750,000 was invested.

§ 8. Probates.

1. *Probates and Letters of Administration.*—The value of the estates left by deceased persons gives some idea of the distribution of property among the general population. There were in 1928 approximately 46,500 deaths of adult persons, while the number of probates and letters of administration granted during the same period was 18,570. It would therefore appear that about two-fifths of the adults who died during the year were possessed of sufficient property to necessitate the taking out of probate. The details for each State are shown in the table hereunder :—

PROBATES AND LETTERS OF ADMINISTRATION, 1928.

State.	Year ended—	Number of Estates.			Net Values of Estates.		
		Probates.	Letters of Adminis-tration.	Total.	Probates.	Letters of Adminis-tration.	Total.
					£	£	£
New South Wales ..	30.6.28	7,749	(a)	7,749	21,819,953	(a)	21,819,953
Victoria ..	31.12.28	4,504	1,676	6,180	16,679,553	(a)	16,679,553
Queensland ..	30.6.28	794	179	973	6,681,897	b 377,011	5,058,908
South Australia ..	31.12.28	1,670	172	1,842	3,890,649	134,375	4,025,024
Western Australia ..	"	880	377	1,257	2,303,762	220,499	2,524,261
Tasmania ..	"	505	64	569	1,286,323	59,743	1,346,066
Total ..	—	16,102	2,468	18,570	50,662,137	791,628	51,453,765

(a) Included with Probates. (b) Gross value.

2. **Intestate Estates.**—The number of intestate estates placed under the control of the Curator during the year, and the amount of unclaimed money paid into Consolidated Revenue in each State during the year 1928, are given hereunder :—

INTESTATE ESTATES, 1928.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Intestate estates placed under control of Curator during 1928—							
Number	(a)	(b)	1,387	218	251	e 125	c 1,981
Value £	(a)	(b)	864,074	69,994	d 28,959	e 20,736	c 988,763
Unclaimed money paid into Consolidated Revenue by Curator during 1928 £	163,332	(b)	120,085	4,442	1,974	1,541	c 291,374

(a) Included with Probates. (b) Not available. (c) Incomplete. (d) Gross Value.
(e) Estates wound up by Public Trustee.

CHAPTER IX.

EDUCATION.

§ 1. Evolution of Educational Systems in Australia.

1. *Educational Systems of the States.*—(i) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian Education should have had its beginning in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part, and has had practically a dominating influence. The subject is dealt with in some detail in No. I. and No. II. issues of the Commonwealth Official Year Book, but it is not proposed to repeat it in the present volume. (See also 2 hereunder.)

(ii) *Educational Systems of other Commonwealth States.* A more or less detailed account of the origin and development of the educational systems of the other States also appears in No. I. and No. II. issues of the Year Book. Later details are given hereunder.

(iii) *Medical Inspection of State School Children.* See Chapter XII., Public Hygiene.

2. *Recent Development in State Educational Systems.*—Preceding issues of the Official Year Book contained an outline of recent developments of the educational systems of the various States (see No. 22, pp. 426–29), but it has been decided to omit this information from the present volume.

As pointed out in previous issues, the educational system of New South Wales may now be considered as a more or less homogeneous entity, the various stages succeeding one another by logical gradation from kindergarten to university. In the other States development is proceeding on somewhat similar lines, activity in this respect being greatly helped by interstate conferences of directors of education and of inspectors and teachers. The seventh biennial conference of Directors of Education was held at Adelaide in May, 1928, and was attended by representatives of all the Australian States.

§ 2. State Schools.

1. *General.*—The State Schools, or, as they are sometimes termed, the “public” schools, of Australia comprise all schools directly under State control, in contradistinction to the so-called “private” schools, the bulk of which, though privately managed, nevertheless cater for all classes of the community. Separate information regarding Technical Education is given in § 6, but the junior technical schools are included hereunder.

2. *Returns for Year 1928.*—(i) *General.* The following table shows the number of State Schools, together with the teachers employed and the enrolment and “average attendance” in each State during the year 1928 :—

STATE SCHOOLS.—RETURNS, 1928.

State or Territory.	Schools.(a)	Teachers.(b)	Scholars Enrolled.	Average Attendance.	Percentage of Attendance on Enrolment.
New South Wales (c) ..	3,313	11,772	344,171	294,553	85·6
Victoria ..	2,734	9,079	255,763	203,740	79·6
Queensland ..	1,739	4,239	143,043	112,588	78·7
South Australia ..	1,027	3,356	87,785	75,434	85·9
Western Australia ..	852	2,026	56,994	50,938	89·4
Tasmania ..	499	1,353	31,977	27,000	84·4
Northern Territory ..	5	13	327	243	74·3
Australia ..	10,169	31,838	920,060	764,496	83·1

(a) Schools open during year. (b) Exclusive of sewing mistresses. (c) Including Federal Capital Territory.

(ii) *Schools in the Federal Capital Area.* During the year 1928 fifteen State Schools were in operation in the Federal Capital Territory (Yass-Canberra). The pupils enrolled numbered 1,349 and the average attendance 882. Cost of upkeep amounted to £13,249. By arrangement with the Federal Government these schools are conducted by the New South Wales Education Department on the same lines as the ordinary State Schools, the Department being recouped for expenditure. Ample provision has been made for both primary and secondary education, and this will be increased to meet requirements. The question of the establishment of a University at Canberra is under consideration, and in the meantime a University College has been established. By virtue of a regulation of the University of Melbourne, the College is empowered to provide approved lectures in all subjects of the Arts, Science, Commerce, and Law courses of that University. At present about 30 students are attending lectures.

3. *Growth of Enrolment and Attendance.*—The enrolment and average attendance at the State Schools in Australia are given below for the years 1891, 1901, 1911, and for each year of the period 1924 to 1928 :—

STATE SCHOOLS.—ENROLMENT AND ATTENDANCE.—AUSTRALIA, 1891 TO 1928.

Year.	Total Population. (a)	Enrolment.	Average Attendance.	Year.	Total Population. (a)	Enrolment.	Average Attendance.
1891 ..	3,421	561,153	350,773	1925 ..	5,992	872,473	720,975
1901 ..	3,825	638,478	450,246	1926 ..	6,111	883,925	730,571
1911 ..	4,573	638,850	463,799	1927 ..	6,235	901,326	748,712
1924 ..	5,874	861,256	705,990	1928 ..	6,337	920,060	764,496

(a) At 31st December, in thousands.

During the last five years the average attendance increased by 8 per cent., the figures ranging from about 10 per cent. and 9 in New South Wales and South Australia respectively to about 4 per cent. in Tasmania.

4. *Distribution of Educational Facilities.*—(i) *In Sparsely-settled Districts.* The methods adopted in the various States to carry the benefits of education into the remotest and most sparsely-settled areas are set out in some detail in previous issues of the Official Year Book (see No. 22, pp. 430-31), but this information cannot be repeated in the present volume.

(ii) *Centralization of Schools.* The question of centralization of schools adopted so successfully in America and Canada has received some attention in Australia, and particularly in New South Wales. It is recognized that a single adequately staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less highly trained teachers, and the small schools in some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, and in 1928 a sum of £56,884 was expended in boarding allowance and conveyance to central schools. Cost of conveyance to State Schools in Victoria during 1928 was returned as £10,350. In South Australia the sum of £8,549 was disbursed in connexion with travelling expenses of school children in 1928, while £12,130 was spent in Western Australia, and about £3,900 in Tasmania. (It may be pointed out, however, that the parents are often reluctant to part with the small schools which form, as it were, "heart centres" in their little community, while the kindly help of the teachers is a great asset in the social and intellectual life of the districts served by the schools.)

(iii) *Education of Retarded and Defective Children.*—This subject was alluded to at some length in preceding issues of the Official Year Book (see No. 22, pp. 431-2), but the information cannot be repeated in this issue.

(iv) *Evening Schools.* Evening Public Schools have been in existence for many years in some of the States, but their progress has been uncertain. In New South Wales the 54 Evening Continuation Schools had an effective enrolment in 1928 of 4,758, and

an average attendance of 3,639. The schools for boys are classed as commercial, commercial preparatory, junior technical, and junior technical preparatory, and for girls as domestic and domestic preparatory. Attendances at the schools for boys numbered 3,080, and at those for girls 559. The comparatively high proportion of attendance to enrolment shows that the institutions are attractive. In Victoria there were 11 evening continuation classes in operation during 1928, the average attendance being 52. Although the Education Act of 1910 gives authority for the establishment of evening continuation classes at which the attendance of boys up to the age of seventeen years and living within a radius of 2 miles may be made compulsory for six hours a week, considerations of expense have prevented the free exercise of this power. Evening Continuation Schools have been established under regulation in South Australia, and are intended principally to help the working boy to improve his general education. In Western Australia evening continuation classes were held at 22 centres in 1928, with an average enrolment of 2,603 pupils.

(v) *Higher State Schools.*—In all the States higher schools have been established which provide advanced courses of instruction for pupils who have completed the primary grades. Reference to the development of these schools will be found in preceding Official Year Books (see No. 22, pp. 433-4), but considerations of space preclude the repetition of this information herein.

(vi) *Agricultural Training in State Schools.*—Extended reference to the methods adopted in the teaching of agriculture in State Schools will be found in preceding Official Year Books (see No. 22, pp. 434-7), but considerations of space preclude the repetition of this matter herein.

5. *Teachers.*—The distribution of the teaching staff in the State Schools during the year 1928, including teachers of needlework, was as follows:—

STATE SCHOOLS.—TEACHING STAFF, 1928.

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mistresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales	2,472	1,079	2,522	5,699	..	..	230	4,994	7,008	12,002
Victoria ..	1,900	992	1,115	3,226	514	1,332	372	3,529	5,922	9,451
Queensland ..	1,064	641	706	1,515	137	176	..	1,907	2,332	4,239
South Australia ..	627	448	692	1,408	62	119	219	1,381	2,194	3,575
Western Australia	445	365	254	783	22	157	141	721	1,446	2,167
Tasmania ..	218	351	103	442	46	193	8	367	989	1,356
Northern Territory	8	8	2	4	..	1	..	5	8	13
Total ..	6,729	3,879	5,394	13,077	781	1,978	965	12,904	19,899	32,803

The figures for principal teachers include mistresses of departments, while students in training colleges have been grouped with assistants. Some of the teachers in sole charge of small schools have had very little training, but future permanent appointments will be confined as far as possible to those who have gone through a regular course of instruction.

It will be observed that there is a fairly large number of junior teachers, or pupil teachers, as they are called in some of the States. Although expert pedagogical opinion throughout the world is against the pupil-teacher system, motives of practical expediency compel its retention, or some modification thereof, in most countries. Allusion to the methods of training will be found in the next sub-section.

In New South Wales and in some of the other States attention has recently been drawn to the difficulty of securing an adequate supply of teachers, particularly male teachers for small schools in out-back districts. Difficulty is also experienced in some of the States in securing suitable living accommodation for teachers of these small schools.

6. *Training Colleges.*—The development of the training systems of the various States has been alluded to at some length in earlier issues of the Year Book (see No. 22, pp. 437-9), but considerations of space will not permit of its retention herein.

7. *Expenditure.*—(i) *Maintenance—All Schools.* The net expenditure on maintenance in all grades of schools, excepting technical schools, and the cost per head of average attendance for the five years ended 1928 are shown below. The figures do not include expenditure on buildings, which is given separately in a subsequent table.

STATE SCHOOLS.—EXPENDITURE ON MAINTENANCE, 1924 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Total.
TOTAL.								
	£	£	£	£	£	£	£	£
1924	3,296,669	1,859,809	1,264,005	538,744	543,395	240,787	4,015	7,747,424
1925	3,520,903	1,963,214	1,364,844	597,960	548,426	246,429	4,326	8,246,102
1926	3,626,447	2,132,519	1,406,853	710,499	556,748	251,307	4,443	8,688,816
1927	3,697,618	2,340,581	1,438,969	743,274	605,704	257,653	4,406	9,088,205
1928	3,937,082	2,464,714	1,471,322	778,715	624,271	266,281	5,153	9,547,538

PER HEAD OF AVERAGE ATTENDANCE.

	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.			
1924	12	5	6	9	16	10	11	16	7	7	16	8	11	5	0	8	19	0	19	6	10	19	6	
1925	12	18	3	10	1	3	12	9	0	8	12	4	11	3	5	8	19	0	20	10	0	11	8	9
1926	13	3	3	10	16	6	12	12	10	9	17	10	11	4	6	9	0	3	18	19	9	11	17	10
1927	12	17	8	11	14	6	12	14	6	10	3	2	12	1	5	9	4	11	18	10	2	12	2	0
1928	13	7	4	12	1	11	12	13	7	10	6	6	12	5	1	9	17	3	21	4	1	12	9	9

The combined growth in cost of maintenance during the last five years has been brought about by the higher salaries and allowances paid to teachers, and the increased expenditure in connexion with the supply of materials and equipment. Practically the whole of the increase in Western Australia for the year 1927 was due to the reclassification and new salary scales for teachers.

(ii) *Maintenance—Secondary Schools.* The figures given in the preceding table refer to expenditure on maintenance of all State primary and secondary schools, exclusive of technical colleges. It has been thought desirable by the State Education Departments to give separate information in regard to the cost of secondary education. Any satisfactory estimate of this nature is, however, rendered difficult by the circumstance that there is no exactly comparable definition of the term "secondary" as applied in the various States, while difficulties arise in connexion with the correct apportionment amongst the various branches of expenses of administration, inspection, and the training of teachers. A further complication is caused by the fact that both elementary and higher education are in some instances given in the same school and by the same teacher. The figures quoted in regard to cost hereunder have been extracted from the Reports of the State Education Departments, and are subject to the qualifications above enumerated.

STATE SECONDARY SCHOOLS.—EXPENDITURE ON MAINTENANCE, 1928.

State.	Cost.	Cost Per Head of Population.
	£	s. d.
New South Wales	493,124	4 1
Victoria	300,859	3 5
Queensland.. .. .	130,622	2 11
South Australia	93,761	3 3
Western Australia	121,130	6 1
Tasmania	19,419	1 10

The figures in all cases are exclusive of cost of buildings. For Queensland, the figure quoted does not include the cost of the Agricultural High School and College, which amounted in 1928 to £28,517.

(iii) *Buildings.* Expenditure on school buildings in each of the years quoted was as follows:—

STATE SCHOOLS.—EXPENDITURE ON BUILDINGS, 1924 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Total.
	£	£	£	£	£	£	£	£
1924	766,019	531,571	157,683	107,466	71,634	20,643	184	1,655,200
1925	621,109	459,303	126,392	138,132	63,373	43,248	823	1,452,380
1926	638,387	508,121	138,784	231,207	57,337	34,716	132	1,608,684
1927	668,413	578,691	98,905	156,520	53,506	21,751	..	1,577,786
1928	1,004,241	398,939	143,995	102,477	68,957	44,150	..	1,762,759

The large increases in expenditure shown in most instances during the last four years were due to the efforts made to overtake arrears in necessary buildings and repairs.

(iv) *Total.* The net total cost during the year 1928 was as follows:—

STATE SCHOOLS.—NET TOTAL COST, 1928.

Item.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Total.
	£	£	£	£	£	£	£	£
Net cost of education, including buildings	4,941,323	2,863,653	1,615,317	881,192	693,228	310,431	5,153	11,310,297

The figures in this and the preceding tables refer to all grades of State schools (with the exception of technical schools), and include evening schools. Including buildings, the net cost per scholar in average attendance for the whole of the State schools in Australia amounted in 1928 to £14 15s. 11d., as compared with £4 9s. 3d. in 1901.

8. *School Savings Banks.*—In New South Wales the control of these institutions was taken over in 1924 by the Government Savings Bank, which allows interest on the children's deposits. At the 30th June, 1929, there were 1,367 school banks, with 114,533 depositors having at credit £169,380. In Victoria banks were in operation at 2,227 schools at the 30th June, 1929. On the same date the number of depositors amounted to 153,178 and balances at credit to £262,941. In South Australia, there were 56,426 depositors, with £85,446 to their credit; and in Western Australia, there were 700 school banks, with 52,226 depositors and £91,101 to their credit.

§ 3. Private Schools.*

1. *Returns for 1928.*—The following table shows the number of private schools, together with the teachers engaged therein, and the enrolment and average attendance in 1928:—

PRIVATE SCHOOLS, 1928.

State.	Schools.	Teachers.	Enrolment.	Average Attendance.
New South Wales	721	4,582	104,227	73,109
Victoria	500	2,325	65,245	(a) 55,500
Queensland	197	1,209	32,202	26,403
South Australia	177	891	17,298	13,635
Western Australia	118	521	12,051	10,802
Tasmania	65	259	6,566	4,920
Northern Territory	1	5	124	95
Total	1,779	9,792	237,713	184,464

(a) Estimated.

The totals for New South Wales include returns from the Sydney Grammar School, which receives a yearly State subsidy of £1,500, and which, in 1928, had an enrolment of 642, and an average attendance of 566.

* Private schools include all schools not wholly under State control. The term "private," though popularly applied, is, of course, a misnomer.

The figures for Queensland include the returns from Grammar Schools, of which there are ten—six for boys and four for girls, with an enrolment of 1,446 boys and 870 girls. These schools are governed by boards of trustees, partly nominated by Government, and partly by the subscribers to the funds. The trustees make regulations regarding the fees of scholars, the salaries of teachers, and generally for the management of the schools. The total Government aid received in 1928 amounted to £18,000. In addition, a sum of £16,205 was received for Government scholarships and bursars' fees. The Grammar Schools are inspected annually by officers of the Department of Public Instruction.

2. **Growth of Private Schools.**—The enrolment and average attendance at private schools during 1891, 1901, 1911, and in each year of the period 1924 to 1928 are as follows:—

PRIVATE SCHOOLS.—ENROLMENT AND ATTENDANCE, 1891 TO 1928.

Year.	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891	124,485	99,588	1925	228,564	175,283
1901	148,659	120,742	1926	233,566	178,985
1911	160,794	132,588	1927	235,074	181,396
1924	229,543	175,614	1928	237,713	184,464

The increase in average attendance during the last five years amounted to about 5 per cent.

3. **Registration of Private Schools.**—Conditions in regard to the registration of private schools were alluded to in previous Year Books (*vide* No. 18, p. 451), but consideration of space precludes the repetition of this information in the present issue.

§ 4. Free Kindergartens.

The following information regarding Free Kindergartens has been compiled from particulars supplied by the principals of the chief institutions or the organizing secretary in each State, except in the case of Western Australia, the details for which were furnished by the Education Department.

FREE KINDERGARTENS, 1928.

State.	No. of Schools.	Average Attendance.	Permanent Instructors.	Student Teachers.	Voluntary Assistants.
New South Wales (Sydney)	16	860	32	40	70
Victoria (Melbourne)	28	1,534	63	36	300
(Ballarat)	1	37	2	..	13
Queensland (Brisbane)	6	(a) 350	8	17	10
South Australia (Adelaide)	8	360	8	18	6
Western Australia (Perth)	7	242	12	15	..
Tasmania (Hobart)	4	123	6	3	2
(Launceston)	2	95	4	..	8
Total	72	3,601	135	129	409

(a) Estimate.

In New South Wales there were 85 students at the Kindergarten Training College. At the Melbourne College, 36 students were in training. The Brisbane Training College had 17 students in training, the Training College at Adelaide 27, and at Perth 15. Four students were in training at Hobart.

The information given above refers to institutions under private kindergarten unions or associations, and is exclusive of the kindergarten branches in the Government schools of the various States.

§ 5. Universities.

1. **Origin and Development.**—A brief account of the origin and development of the Universities in the various States is given in preceding issues of the Official Year Book (see No. 22, pp. 442-3), but this information cannot be repeated herein.

2. **Teachers and Students.**—The following table shows the number of professors and lecturers, and the students in attendance at each of the State Universities during the year 1928:—

UNIVERSITIES.—TEACHERS AND STUDENTS, 1928.

University.	Professors.	Lecturers and Demonstrators.	Students attending Lectures.		
			Matriculated.	Non-matriculated.	Total.
Sydney	49	154	..	..	2,382
Melbourne	28	146	..	..	(a) 2,534
Queensland (Brisbane) ..	30	48	480	108	588
Adelaide	19	110	892	870	(b) 1,762
Western Australia (Perth) ..	13	32	446	71	517
Tasmania (Hobart) ..	10	19	159	46	205

(a) Exclusive of 252 music students. (b) Exclusive of 536 music students and 886 not studying for a degree.

Students at the Conservatorium of Music have been excluded in the case of Melbourne and Adelaide. The Conservatorium in Sydney, while attached to the Education Department, is not under the control of the University.

3. **University Revenue.**—The income of the Universities from all sources during the year 1928 was as shown in the table below. The figures in the column "private foundations" refer to income from investments, the cash value of benefactions received during the year being shown separately in the appended notes.

UNIVERSITIES.—REVENUE, 1928.

University.	Government Grants.		Fees.	Private Foundations.	Other.	Total.
	Ordinary.	Special.				
	£	£	£	£	£	£
Sydney	32,000	(a)55,170	44,335	(b)347,399	32,330	511,234
Melbourne	65,599	893	81,531	(d)58,304	17,078	223,405
Queensland (Brisbane) ..	26,607	..	11,670	(e)27,514	2,762	68,553
Adelaide	24,000	(c)32,551	28,500	(d)19,390	6,106	110,547
Western Australia (Perth) ..	32,750	1,879	2,375	(f)34,787	8,171	79,962
Tasmania (Hobart) ..	14,341	..	2,844	1,579	286	19,050
Total	195,297	90,493	171,255	488,973	66,733	1,012,751

(a) Includes £52,670 yearly appropriation and special grant of £2,500 from Commonwealth and States Governments. (b) Includes new foundations, £271,747. (c) Includes £700 Commonwealth vote for research. (d) Includes new foundations, £32,044. (e) Includes £9,323, new endowments. (f) Includes £1,384, new foundations.

In preceding issues of the Official Year Book information was given in some detail in regard to the extent to which the Universities have benefited from private munificence. Space will permit of reference to the most important benefactions only herein. Thus the Challis bequest to the Sydney University amounted to £277,000 (now valued at £316,000): Mr. G. H. Bosch contributed £221,000: Sir P. N. Russell £100,000: Mr. W. O. Watt £78,000: Mr. Thos. Fisher £30,000. Mr. Sidney Myer's gifts to the

Melbourne University amounted to £55,000, while Sir Samuel Gillott, Mr. Edward Wilson (Argus Trust), and Sir Samuel Wilson contributed £41,000, £32,000, and £30,000 respectively. The Hon. Francis Ormond contributed £20,000 to the University as well as benefactions to Ormond College amounting to considerably over £100,000. The chief benefactors to Adelaide University were Sir Thomas Elder, £99,000; Sir Langdon Bonython, £60,000; Mr. T. E. Barr Smith, £32,000; and Mrs. Jane Marks, £30,000. Several very valuable properties were also bequeathed to this University by Mr. Peter Waite. Under the will of Sir Winthrop Hackett the University of Western Australia received £425,000, while the late Robert Gladden bequeathed an estate valued at £60,000.

4. **University Expenditure.**—For the year 1928 the expenditure by the Universities under various headings was as follows:—

UNIVERSITIES.—EXPENDITURE, 1928.

University.	Salaries and Administration.	Scholarships, Bursaries, etc.	General Maintenance.	Buildings and Grounds.	Other.	Total.
	£	£	£	£	£	£
Sydney	152,222	6,859	35,440	7,138	212	201,871
Melbourne	116,794	7,310	8,315	12,497	(d) 55,799	199,716
Queensland (Brisbane) ..	35,004	640	3,247	494	(a) 14,224	53,609
Adelaide	60,825	1,201	4,475	4,634	(b) 37,028	108,163
Western Australia (Perth)	28,366	7,260	5,450	10,708	(c) 19,737	71,521
Tasmania (Hobart) ..	13,358	1,457	2,018	809	1,531	19,173
Total	405,569	24,727	58,945	36,280	128,531	654,052

(a) Includes laboratory and research, £8,182. (b) Includes laboratory and research, £23,768
(c) Laboratory and research, £5,450. (d) Includes laboratory and research, £11,317.

5. **University Extension.**—Some account of the initiation and progress of university extension is given in preceding Official Year Books (see No. 22, p. 446), but considerations of space preclude the insertion of this matter in the present issue.

6. **Workers' Educational Association.**—In 1913 Workers' Educational Associations were formed in all the States of Australia, and later in New Zealand. The movement has for its object the bringing of the University into closer relationship with the masses of the people, and thereby providing for the higher education of the workers in civic and cultural subjects. There are now direct grants from all State Governments except Western Australia, and an additional University grant in New Zealand. The particulars of grants for classes are as follow:—New South Wales, £5,970, 58 classes and 3 study circles; Victoria, £4,250, 33 tutorial classes and extension work; Tasmania, £2,105, 23 full classes and 2 study circles; South Australia, £2,800, 23 classes including 7 study circles; Queensland, £3,000, 12 classes and 575 correspondence students. In addition, the New South Wales Association receives a Government grant for general organizing purposes of £500, paid on the basis of £1 for £1 on subscriptions and donations up to this amount. The Carnegie Corporation has recently shown its interest in the work by allotting grants of \$10,000 to New South Wales and to Victoria and \$5,000 to each of the other States. The principal subjects chosen in all States are Industrial History, Economics, Political Science, and Sociology, but there is an increasing number of classes in other subjects such as History, Psychology, Philosophy, Literature, Music, Physiology, and Biology. Each University co-operates with the W.E.A. in the formation of a joint committee which appoints tutors and generally

supervises the work with the assistance of a University officer with the title of Director of Tutorial Classes. In addition to the longer and more serious courses, a great many preparatory classes, study circles, and summer schools are organized by the Association, numerous courses of public lectures are delivered, educational conferences promoted, and an extensive book service is spreading educational literature throughout Australia.

§ 6. Technical Education.

1. **General.**—Although provision has been made in all of the States in respect to many necessary forms of technical education, the total provision made would imply that this branch of education has not been regarded as of outstanding importance. As will be seen later on, the expenditure on technical education for the whole of Australia is comparatively small. In preceding issues of the Official Year Book an outline was given of the origin and development of technical education in each State (see No. 22, pp. 447–51), but considerations of space preclude its repetition in the present volume.

2. **Returns for Year 1928.**—Returns for the year 1928 in regard to enrolments and attendances, etc., in each State are given in the table hereunder.

TECHNICAL EDUCATION.—ENROLMENTS, ETC., 1928.

State.	Number of Classes.	Teachers.	Enrolments.	Average Attendance.	Fees Received.
					£
New South Wales ..	751	604	32,960	(a) 15,326	23,359
Victoria ..	142	625	25,578	19,122	39,886
Queensland ..	(b)	486	15,452	12,500	14,772
South Australia ..	613	215	13,536	10,220	9,132
Western Australia ..	438	140	7,741	6,528	3,167
Tasmania ..	(b)	110	1,653	1,309	1,684
Total ..	1,944	2,180	96,920	65,005	92,000

(a) Individual Students.

(b) Not available.

Figures for earlier years will be found in preceding volumes. With regard to the figure quoted for number of classes in Victoria, it is stated that each grade only of a subject is counted as a class.

3. **Expenditure on Technical Education.**—The expenditure on technical education in each State for the year 1928 is shown below:—

TECHNICAL EDUCATION.—EXPENDITURE, 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
1928 { (a)	196,907	318,094	101,419	72,639	23,100	23,498	735,657
(b)	48,122	30,713	3,123	3,398	3,168	637	89,161

(a) Maintenance. (b) Buildings.

The expenditure on maintenance for technical education in 1928 amounted to 2s. 4d. per head of the population of Australia, as compared with 30s. 2d. per head expended on maintenance for primary and secondary education.

§ 7. Business Colleges and Shorthand Schools.

There has been considerable development in recent years both in the number and scope of privately conducted institutions which aim at giving instruction in business methods, shorthand, typewriting, the use of calculating machines, etc. Particulars for all States excepting Queensland are given in the following table:—

BUSINESS COLLEGES, SHORTHAND SCHOOLS, ETC., 1928.

State.	Schools.	Teachers.	Students Enrolled.		Average Attendance.		Fees Received.
			Males.	Females.	Males.	Females.	
New South Wales..	20	186	1,756	6,122	714	3,010	£ 66,788
Victoria ..	16	141	3,172	3,333	2,115	2,296	(b)
Queensland (a) ..	..	..	..	..	..	..	..
South Australia ..	7	48	798	1,212	526	977	17,575
Western Australia..	11	59	1,556	1,592	(b)	(b)	26,493
Tasmania ..	3	15	97	379	58	216	6,200

(a) Included in private schools. (b) Not available.

The figures for New South Wales are exclusive of students instructed at home through the medium of correspondence classes.

§ 8. Diffusion of Education.

1. **General Education.**—A rough indication of the state of education of the people is obtained at each Census under the three headings, "read and write," "read only," and "cannot read." Particulars for each State and Territory were included in previous issues of the Official Year Book (see No. 19, p. 439). Detailed tables dealing with various aspects of education were published in connexion with the Census of 1921. Here it must suffice to mention that during the period 1871 to 1921 the proportion per 10,000 of the population of Australia able to read and write advanced from a little over 6,000 to nearly 8,500, while that of those able to read only fell from about 1,100 to under 30.

2. **Education as shown by Marriage Registers.**—Another common method of testing the spread of education is to compare the number of mark signatures in the marriage registers with the total number of persons married during each year of a series. The percentage signing with a mark to the total persons married in the Census year 1921 was only 0.17, as compared with 24.60 in 1861.

§ 9. Miscellaneous.

1. **Scientific Societies.**—(i) *Royal Societies.* In previous issues of the Official Year Book an outline was given of the origin and progress of the Royal Society in each State (see No. 22, pp. 454-5), but considerations of space preclude the retention of this matter in the present volume. The accompanying table, however, contains the latest available statistical information regarding these institutions, which in every case have their headquarters in the capital cities of the States.

ROYAL SOCIETIES—PARTICULARS, 1929.

Heading.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
Year of origin	1,821	1,854	1,884	1,853	1,897	1,843
Number of members ..	341	206	175	160	215	2
Vols. of transactions issued..	63	74	41	61	19	65
Number of books in library..	30,000	17,000	8,000	8,000	2,800	16,050
Societies on exchange list ..	385	320	200	230	116	257
Income £	3,217	717	356	717	288	344
Expenditure £	3,364	671	327	595	335	343

In connexion with the year of origin it may be pointed out that the title Royal Society was in most cases assumed at a later date than that shown in the tables as the Societies originated under different names.

(ii) *The Australasian Association for the Advancement of Science.* This Association was founded in 1887, with head-quarters at the Royal Society's House in Sydney. Its meetings are usually held biennially within the various States and in the Dominion of New Zealand. The next meeting will be held in Sydney in 1932. The library of the Association contains 4,000 volumes.

(iii) *Other Scientific Societies.* The Linnean Society of New South Wales, with head-quarters in Sydney, was founded in 1874. The soundness of its present position is due to the benefactions of Sir William Macleay, who during his lifetime and by his will endowed the Society to the amount of £67,000, which has been increased by judicious investment to over £80,000. The Society maintains a research bacteriologist and offers annually 4 research fellowships in various branches of natural history. Two fellowships were awarded in 1929. The library comprises some 14,000 volumes, valued at about £7,000. Fifty-four volumes of proceedings have been issued, and the Society exchanges with some 219 kindred institutions. The ordinary membership at the end of 1929 was 169.

The British Astronomical Society has a branch in Sydney, and in some of the States the British Medical Association has branches.

In addition to the societies enumerated above, there are various others in each State devoted to branches of scientific investigation.

2. Public Libraries.—(i) *States.* In each of the capital cities there is a well-equipped Public Library, the institutions in Melbourne and Sydney especially comparing very favourably with similar institutions elsewhere. The following statement gives the number of volumes in the Public Library of each capital city :—

METROPOLITAN PUBLIC LIBRARIES, 1928.

City.	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney	(a) 362,137	(b) ..	64,050	426,187
Melbourne	351,483	54,107	..	405,590
Brisbane	54,190	..	..	54,190
Adelaide	147,932	66,114	..	214,046
Perth	131,071	..	19,577	150,648
Hobart	30,000	..	..	30,000

(a) Including 120,548 volumes in the Mitchell Library.

(b) The maintenance and control of the ordinary lending branch of the Public Library at Sydney were transferred in 1908 to the Municipal Council. At the end of December, 1928, the books numbered 48,885.

In connexion with the Country Lending Branch of the Sydney Public Library, it may be noted that books are forwarded on loan to State schools, to approved associations, and to Schools of Art. During the year 1928-9, over 88,000 volumes were thus circulated, while over 34,000 books were lent to 22,000 individual students.

A special research staff attached to the Public Library gives valuable assistance in making readily available to inquirers the store of information contained in books, etc., which, owing to limitations of space, are not in open access.

The Mitchell Library in Sydney consisted of over 60,000 volumes and pamphlets, and 300 paintings, principally relating to Australasia, valued at £100,000, and bequeathed in 1907 by Mr. D. S. Mitchell, together with an endowment of £70,000. The testators stipulated that the regulations of the British Museum were to be adopted as far as practicable, hence the library is the resort of specialists. There are now over 122,000 volumes in the library in addition to valuable collections of Australian postage and fiscal stamps.

Amongst other important libraries in New South Wales may be mentioned the "Fisher" Library at Sydney University, with 182,000 volumes; the library at the Australian Museum, 26,000; the Teachers' College library, 33,000; Sydney Technical College library, 14,700; and the library at the Botanic Gardens, 9,900. The libraries attached to State schools contain about 481,000 volumes.

The reading room at the Melbourne Public Library ranks among the finest in the world. It was opened in 1913, and has a diameter of 114 feet, with a similar height, and is capable of seating 320 readers at a time, all of whom are under efficient supervision from the centre of the room. During the year 1928, 4,981 volumes were lent to Mechanics' Institutes and Free Libraries, and 11,549 books were sent by post to borrowers in the country.

The library at Brisbane (South) contained about 14,400 volumes at the end of June, 1928.

For some years past efforts have been made in South Australia to collect original documents likely to be of service in compiling a history of the State. So far back as 1914, Professor Henderson, of Adelaide University, under commission from the South Australian Government, visited and reported on the system of keeping archives in England, France, Belgium, Holland, and Ceylon, and obtained valuable information also from the United States and Canada. A department of historical documents has been created under the care of an archivist, and valuable work has been done in connexion with examination, classification, and permanent preservation of the available papers. A suitable building for housing the documents and the staff was provided in 1921. At the 30th June, 1929, the collection numbered 276,187 documents, 11,514 views, and 1,095 maps.

During 1922 the Tasmanian Public Library adopted the plan of lending books to individual country borrowers and to families or committees of residents in country districts. The Public Library at Launceston contains 34,000 volumes.

Statistics in regard to libraries generally are not available for all States, while the information supplied is not in all cases complete. Returns for Victoria in 1928 showed a total of 419 libraries in receipt of State or municipal aid, containing 1,391,000 books; Queensland returned 254 libraries, with 532,000 books; South Australia, 294 libraries and 800,000 books; Tasmania, 23 libraries and 127,000 books; while there were 3 libraries, with 6,000 books, in the Northern Territory.

(ii) *Commonwealth*—(a) *Parliamentary and National Library*. When the Commonwealth Parliamentary Library was created in 1902, it was recognized that at such time as the Federal Capital was established it would be necessary to have available there, for the use of members and the public servants, a library whose scope was wider than that usually associated with a purely Parliamentary one. To this end, therefore, this library was developed on lines similar to those of a State Public Library, and particular attention was given to the acquisition of works relating to or published in Australia. In pursuance of this policy it acquired in 1909 a valuable collection of *Australiana*, comprising about 10,000 volumes, which had been formed by Mr. E. A. Petherick. In 1912, also, a provision was included in the Commonwealth Copyright Act requiring the publisher of any book, pamphlet, etc., printed in the Commonwealth to supply a free

copy to this library. In the same year it undertook the publication of the Historical Records of Australia. The rapid development of the Australian and National Sections of the library led the Library Committee in 1923 to decide that the title "Commonwealth National Library" should be given to these, and that at Canberra the library should be divided into two sections—a Parliamentary and a National Section—the former to be housed in Parliament House, the latter in a separate building, to which the public would be given free access. Though now, therefore, in two sections, it is essentially one library, with one administration.

The total number of volumes at the beginning of 1928 was 79,000 books and 6,500 pamphlets, its chief features being its unique collection of Captain Cook's manuscripts and early works relating to Australia, also its extensive series of official publications of Great Britain and all the Dominions.

(b) *Patents Office Library.* The free library attached to the Commonwealth Patents Office in Melbourne contains over 46,000 volumes, and includes literature dealing with patents in the principal countries of the world.

3. *Public Museums and Art Galleries.*—Previous issues of the Official Year Book contained a brief description of the public museums and art galleries in each State (see No. 22, pp. 457-9), but considerations of space preclude the incorporation of this matter in the present volume.

4. *State Expenditure on all Forms of Educational Effort.*—The expenditure from the Consolidated Revenue in each State and Territory on all forms of educational and scientific activity during the year 1928-29 was as follows:—

EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1928-29.

State or Territory.	1928-29.	State or Territory.	1928-29.
New South Wales {	4,624,033	Western Australia {	733,184
Per head	37/8	Per head	36/1
Victoria {	2,865,370	Tasmania {	328,650
Per head	32/6	Per head	30/4
Queensland {	1,747,824	Northern Territory {	7,545
Per head	38/2	Per head	37/11
South Australia {	1,034,259	Australia {	11,340,865
Per head	35/8	Per head	35/10

During the quinquennium ending in 1928-29, the total expenditure has risen by nearly £1,838,000, while the expenditure per head of population showed a rise of 3s. 8d. This comparatively heavy increase has been largely due to the expanding provision for State-aided education, to greater cost of building, equipment, and maintenance, and to increments in teachers' salaries and allowances.

CHAPTER X. PUBLIC JUSTICE.

§ 1. Police.

1. **General.**—In early issues of the Year Book a résumé was given of the evolution of the police force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales, but considerations of space preclude its inclusion in the present volume.

2. **Strength of Police Force.**—(i) *General.* The strength of the police force in each State during the five years ended 1928 is given in the table hereunder. It may be mentioned that the police forces (with the exception of the small body of Commonwealth police maintained at the Federal Capital) are entirely under State control, but, by arrangement, the Commonwealth Government utilizes their services in various directions, such as the collection of particulars for Commonwealth electoral rolls, etc.

POLICE FORCES.—STRENGTH, 1924 TO 1928.

State.	Area of State in Sq. Miles.	1924.	1925.	1926.	1927.	1928.
New South Wales ..	310,372	2,890	2,937	2,970	3,109	3,444
Victoria ..	87,884	1,810	1,875	1,963	1,977	2,112
Queensland ..	670,500	1,127	1,182	1,167	1,191	1,125
South Australia ..	380,070	616	632	642	716	801
Western Australia ..	975,920	523	532	537	541	549
Tasmania ..	26,215	241	240	245	246	239
Northern Territory ..	523,620	32	38	38	39	39
Fed. Cap. Territory ..	..	..	..	..	(a)13	13
Total ..	2,974,581	7,239	7,436	7,562	7,832	8,322

(a) Organization created in September, 1927.

The figures for New South Wales for 1928 are exclusive of 28 "black trackers," i.e., natives employed in detection of offenders chiefly in outlying districts, and 4 female searchers. For Queensland the figures exclude 63 native trackers and 1 female searcher; for South Australia 8 "black trackers" and 1 female searcher, and for the Northern Territory 26 "black trackers." There are also 40 "black trackers" and 5 female searchers in Western Australia, not included in the table. According to the returns, women police are employed in all the States except Queensland, the respective numbers being—New South Wales 5, Victoria 4, South Australia 12, Western Australia 5, and Tasmania 1. Their work is mainly preventive, and the importance and usefulness of their duties have been referred to in very high terms by the Commissioners of Police.

(ii) *Proportion to Population.*—The average number of inhabitants to each officer in each State during the same period is as follows. In considering these figures, allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States.

POLICE FORCES.—COMPARISON WITH POPULATION, 1924 TO 1928.

State.	Number of Persons per Sq. Mile, 1921 Census.	Inhabitants to each Police Officer.				
		1924.	1925.	1926.	1927.	1928.
New South Wales ..	6.80	772	776	783	763	710
Victoria ..	17.42	907	891	864	874	834
Queensland ..	1.13	732	720	750	749	814
South Australia ..	1.30	860	861	871	798	723
Western Australia ..	0.34	687	691	698	712	739
Tasmania ..	8.15	891	889	862	854	906
Northern Territory ..	..	113	97	99	109	102
Fed. Cap. Territory ..	..	..	..	..	565	622
Total ..	1.83	802	798	800	788	765

The above figures show, therefore, that the rate of protection maintained for Australia as a whole has remained fairly constant.

3. **Duties of the Police.**—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by various functionaries. Thus, in New South Wales, according to the Report of the Inspector-General, the time of one-fifth of the force was taken up during 1921 in extraneous duties unconnected with the protection of life and property, while the cash value of the services rendered to other Government departments was stated as over £200,000 per annum. The Queensland Commissioner refers to the circumstance that in 1927 no less than 71 subsidiary offices were held by the police. In South Australia, the Commissioner alludes to the large number of subsidiary duties performed by police officers, and mentions that for the year ended June, 1929, nearly 197,000 inquiries were made on behalf of other departments.

While these special tasks doubtless involve some degree of sacrifice of ordinary routine duties, the fact that the general intelligence of the police is adequate for their performance, besides being most creditable, results in a large saving of the public money.

4. **Cost of Police Forces.**—The expenditure from Consolidated Revenue on the police forces, and the cost per head of population in each State during the five years 1924 to 1928, are given in the following table :—

POLICE FORCES.—COST, 1924 TO 1928.

State.	1924.	1925.	1926.	1927.	1928.
TOTAL.					
	£	£	£	£	£
New South Wales ..	1,317,320	1,331,978	1,370,659	1,512,523	1,650,285
Victoria ..	741,126	768,939	840,653	857,306	880,729
Queensland ..	497,484	554,879	563,391	571,706	595,490
South Australia ..	246,646	250,915	263,857	275,844	315,465
Western Australia ..	193,461	216,798	224,690	227,106	268,830
Tasmania ..	81,318	84,340	88,725	91,704	94,059
Northern Territory ..	17,923	19,004	19,656	16,159	22,738
Total ..	3,095,278	3,226,853	3,371,631	3,552,348	3,827,596

PER HEAD OF POPULATION.

	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ..	11 8	11 7	11 9	12 9	13 6
Victoria ..	8 11	9 2	9 11	9 11	10 0
Queensland ..	11 11	12 11	12 11	12 10	13 0
South Australia ..	9 2	9 1	9 5	9 8	10 11
Western Australia ..	10 7	11 8	12 0	11 10	13 3
Tasmania ..	7 6	7 9	8 5	8 9	8 8
Northern Territory ..	99 7	104 0	104 5	76 4	114 2
Total ..	10 6	10 9	11 2	11 6	12 1

In view of the small number of its white population and the vast extent of country to be patrolled, the figures for the Northern Territory necessarily show a very high average. The duties of the police, moreover, chiefly pertain to matters connected with the control of aborigines.

The total for New South Wales in 1928 includes £167,450 payment to the Police Superannuation Fund. Similar payments in Victoria and Queensland amount to £139,500 and £43,800 respectively.

The general advance in cost during the period under review is due to increases in salaries, and rise in prices of supplies and equipment.

5. Interstate Police Conferences.—In February, 1921, a Conference of the chief officers of the police forces of the various States was held in Melbourne. In addition to the discussion of matters of common interest, arrangements were made for the interchange of detectives. The results were so satisfactory that it was decided to hold similar Conferences annually. Amongst other matters discussed at the Hobart Conference in 1927, particular attention was given to the subject of traffic regulation in view of the large and increasing number of motor vehicles. The Conference was held at Melbourne in 1928.

§ 2. Lower (Magistrates') Courts.

1. General.—In considering the criminal returns of the various States, due allowance must be made on account of several factors, such as the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State the breach of which renders a person liable to fine or imprisonment must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces, and the age-constitution and distribution of the States' population, also influence the results. Due weight should also be given to the prevalence of undetected crime, but information on this point is not available for all States. It may be mentioned that each State has its own separate judicial system, the Commonwealth jurisdiction being confined to the High Court of Australia, which is largely a Court of Appeal intermediate to the Privy Council, although it has also original jurisdiction, and the Commonwealth Court of Conciliation and Arbitration and the Federal Court of Bankruptcy. Full particulars regarding the judicial power of the Commonwealth will be found in Chapter III. of the Commonwealth Constitution.

2. Powers of the Magistrates.—Preceding issues of the Official Year Book contained a brief statement of the powers of the magistrates in the various States (see No. 22, page 462), but it is not proposed to repeat this information in the present volume.

3. Persons Charged at Magistrates' Courts.—The total number of persons who were charged before magistrates in each State is given below for the five years 1924 to 1928 :—

MAGISTRATES' COURTS.—PERSONS CHARGED, 1924 TO 1928.

State.	1924.	1925.	1926.	1927.	1928.
New South Wales ..	98,101	102,377	116,675	124,030	132,439
Victoria ..	68,494	73,346	75,556	67,276	60,562
Queensland ..	24,017	28,684	29,196	30,479	27,300
South Australia ..	15,812	20,651	23,637	25,455	21,766
Western Australia ..	10,679	11,358	12,335	13,325	15,499
Tasmania ..	8,001	7,035	7,848	7,309	7,413
Northern Territory ..	204	180	142	317	456
Total ..	225,308	243,631	265,389	268,191	265,435

Investigation of the returns shows that considerable variations in the figures for single States are occasioned by breaches of new Acts, or the more stringent enforcement of the provisions of existing Acts. Any deductions drawn from the total returns as to the increase or otherwise of criminality must, therefore, be largely influenced by a careful analysis of the detailed list of offences. Thus, the considerable increase in the total offences in New South Wales for the year 1926 was due chiefly to the large number of charges under the Traffic Act, the total recorded in 1926 being 20,594 as compared with 11,895 in 1925.

4. Convictions and Committals.—The figures given in the tabulation above include, of course, a number of people who were wrongly charged, and statistically are not of general importance. The actual number of convictions in connexion with the persons who appeared before the lower courts in each year of the period 1924 to 1928 is, therefore, given hereunder. A separate line is added showing the committals to higher courts.

MAGISTRATES' COURTS.—CONVICTIONS AND COMMITTALS, 1924 TO 1928.

State.		1924.	1925.	1926.	1927.	1928.
New South Wales	{ Convictions	83,019	85,970	100,644	107,657	113,398
	{ Committals	2,327	1,806	1,832	1,895	2,403
Victoria	{ Convictions	54,376	58,879	60,728	53,612	47,865
	{ Committals	602	744	761	774	731
Queensland	{ Convictions	21,476	26,148	26,815	28,763	25,563
	{ Committals	233	326	328	337	313
South Australia	{ Convictions	13,790	18,556	21,417	22,876	18,665
	{ Committals	176	181	299	301	420
Western Australia	{ Convictions	9,534	10,047	11,105	12,114	14,197
	{ Committals	92	91	87	84	76
Tasmania	{ Convictions	7,271	6,415	7,200	6,766	6,835
	{ Committals	59	95	99	72	98
Northern Territory	{ Convictions	145	121	129	287	424
	{ Committals	5	..	2	6	2
Total	{ Convictions	189,611	206,136	228,038	232,075	226,947
	{ Committals	3,494	3,243	3,408	3,469	4,043

5. **Convictions for Serious Crime.**—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be overlooked that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliament. Cases of drunkenness and minor breaches of good order, which, if they can be said to come within the category of crime at all, at least do so in a very different sense from some other offences, also help to swell the list. The following table has therefore been prepared for the purpose of showing the convictions at magistrates' courts for what may be regarded as the more serious offences, i.e., against the person and property, either separately or conjointly, and forgery and offences against the currency :—

MAGISTRATES' COURTS.—CONVICTIONS FOR SERIOUS CRIME, 1924 TO 1928.

State.	1924.	1925.	1926.	1927.	1928.
TOTAL.					
New South Wales	7,210	7,543	9,340	10,132	11,674
Victoria	2,815	3,044	3,249	3,588	3,415
Queensland	1,881	2,274	2,608	2,712	3,135
South Australia	724	864	872	1,017	1,091
Western Australia	941	1,108	1,177	1,163	1,344
Tasmania	549	550	607	551	616
Northern Territory	25	5	22	7	51
Total	14,145	15,388	17,875	19,170	21,326

PER 10,000 OF THE POPULATION.

New South Wales	32.3	33.1	41.8	42.7	48.0
Victoria	17.1	18.2	19.1	20.8	19.5
Queensland	22.8	26.7	29.8	30.5	34.5
South Australia	13.7	15.9	15.6	17.8	18.9
Western Australia	26.2	30.1	31.4	30.2	33.7
Tasmania	25.6	25.8	28.7	26.2	29.1
Northern Territory	69.4	13.6	58.4	16.5	121.2
Total	24.4	25.9	29.6	31.1	33.9

6. **Decrease in Serious Crime, 1881 to 1928.**—(i) *Rate of Convictions.* The figures quoted in the preceding table show that during the last five years the rate of serious crime has increased, but if the comparison be carried back to 1881 the position is seen to be more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, 1921, and 1928. Only the more serious offences particularized in the preceding sub-section have been taken into consideration.

MAGISTRATES' COURTS.—SERIOUS CRIME.—RATE OF CONVICTIONS, 1881 TO 1928.

Year.	Convictions per 10,000 Persons.
1881	69.3
1891	44.8
1901	29.1
1921	29.2
1928	33.9

The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially as regards the less important offences, such as petty larcenies, etc.

(ii) *Causes of Decrease.* The statistics given above show that there has been a considerable decrease in crime throughout Australia over the period dealt with. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later. A review of the various factors responsible for this decline is given in preceding issues of the Official Year Book. (See No. 22, p. 465.)

7. **Drunkenness.**—(i) *Cases and Convictions.* The number of cases of drunkenness and the convictions recorded in connexion therewith during the period 1924 to 1928 will be found in the following table :—

DRUNKENNESS.—CASES AND CONVICTIONS, 1924 TO 1928.

State.	1924.		1925.		1926.		1927.		1928.	
	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales	31,468	31,260	30,069	36,160	31,922	31,361	33,011	32,649	33,819	33,136
Victoria	9,814	6,033	9,430	5,767	10,150	6,461	10,793	7,050	9,635	6,241
Queensland ..	11,458	11,005	13,020	12,475	12,713	12,650	12,829	12,657	10,836	10,599
South Australia ..	4,972	4,961	5,830	5,705	6,050	6,029	5,925	5,913	4,996	4,946
Western Australia	3,259	3,231	3,149	3,131	3,318	3,299	3,904	3,881	4,039	4,011
Tasmania	473	464	364	361	333	330	313	303	281	274
Northern Territory	43	39	44	44	68	68	108	108	232	232
Total	61,487	56,993	62,506	57,733	64,554	60,198	66,883	62,561	63,838	59,439

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is open to doubt.

(ii) *Convictions per 10,000 of Population.* The convictions for drunkenness per 10,000 of the population during each of the years from 1924 to 1928 are given hereunder :—

DRUNKENNESS.—CONVICTIONS PER 10,000 INHABITANTS, 1924 TO 1928.

State.	1924.	1925.	1926.	1927.	1928.
New South Wales	140.0	132.3	134.8	137.2	136.2
Victoria	36.7	34.5	38.1	40.8	35.6
Queensland	133.4	146.5	144.5	141.9	116.6
South Australia	93.7	106.5	107.9	103.5	85.7
Western Australia	99.3	85.0	88.0	100.8	100.4
Tasmania	21.6	16.9	15.6	14.4	12.9
Northern Territory	108.2	119.5	180.6	255.1	551.5
Total	98.7	97.3	99.5	101.4	94.6

The convictions for drunkenness taken by themselves are not an altogether satisfactory test of the relative sobriety of the inhabitants of each State, inasmuch as several important factors must be taken into consideration. The age and sex constitution of the people, for example, is by no means identical in all the States. (Owing to the smallness of the population the figures for the Northern Territory are, of course, abnormal.) The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, the likelihood of arrest or summons for drunkenness obviously being greater in the more densely populated regions, while allowance must be made for the attitude of the magistracy, the police, and the public generally in regard to the offence. Due account also must be taken of the effect of legislation dealing with the limitation of hours during which liquor may be sold in hotels.

(iii) *Consumption of Intoxicants.* It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee, and the general habits of the people. Throughout the greater part of Europe, tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shows the consumption of spirits, wine, and beer per head of the population in Australia during each year of the quinquennium 1925–29 :—

INTOXICANTS, CONSUMPTION.—AUSTRALIA, 1925 TO 1929.

Year.	Consumption per Head of Population.		
	Spirits.	Wine.	Beer.
	Imp. Galls.	Imp. Galls.	Imp. Galls.
1924–25	0.43	0.50	11.15
1925–26	0.44	0.50	11.34
1926–27	0.41	0.50	11.56
1927–28	0.40	0.50	11.44
1928–29	0.38	0.50	11.31

The figures in regard to wine are approximate, and are probably to some extent understated, as it is impossible to ascertain the exact quantity of the production which goes into consumption in the form of wine.

(iv) *Treatment of Drunkenness.* (a) *General.* Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened state in the company of professional malefactors, certainly lowers his self-respect, and doubtless tends to swell the ranks of criminals. Examination of the prison records in New South Wales some years ago

disclosed the fact that over 40 per cent. of the gaol population had commenced their criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is as far as possible kept from association with the more evilly-disposed. The Comptroller-General of Prisons in Queensland stated in his Report for the year 1907 that "the drunken habit in many cases is merely one of the many symptoms which jointly indicate the existence of a graver condition than simple habitual drunkenness."

(b) *Remedial.* Legislation has been passed in each State, providing for the commitment of inebriates to special Government institutions. The laws in the various States are as follows:—New South Wales, Inebriates Act 1912; Victoria, Inebriates Acts 1915 and 1923; Queensland, Inebriate Institutions Act 1896; South Australia, Inebriates Acts 1908, 1913, and 1920; Western Australia, Inebriates Acts 1912 and 1919; Tasmania, Inebriates Act 1885, Inebriate Hospitals Act 1892. Curative work was first undertaken by the Government of New South Wales in 1907. In most cases the institutes are connected with the gaols, and, naturally, custodial measures are still a strong feature in their management; nevertheless, the results of remedial measures have been encouraging.

8. *First Offenders.*—In all the States statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows:—New South Wales, 1894; Victoria, 1890, 1908, and 1915 (Crimes Act, sec. 340); Queensland, 1887; South Australia, 1887, 1913, 1924, and 1925; Western Australia, 1892; Tasmania, 1886. The method of procedure is practically the same in all cases, *i.e.*, with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognizances being entered into for his good behaviour for a certain period. In practice, this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

9. *Children's Courts.*—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, Queensland, Western Australia, Tasmania, and New Zealand, while Children's Courts, although not under that name, are practically provided for by the State Children's Acts of 1895 and 1900 in South Australia. The object of these courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court.

10. *Committals to Superior Courts.*—(i) *General.* In a previous sub-section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connexion allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1924 to 1928, with the rate of such committals per 10,000 of the population:—

COMMITTALS TO SUPERIOR COURTS, 1924 TO 1928.

State.		1924.	1925.	1926.	1927.	1928.
New South Wales	No.	2,327	1,806	1,832	1,895	2,403
	Rate	10.4	7.9	7.9	8.0	9.9
Victoria	No.	602	744	761	774	731
	Rate	3.7	4.5	4.5	4.5	4.2
Queensland	No.	233	326	328	337	313
	Rate	2.8	3.8	3.7	3.8	3.4
South Australia	No.	176	181	299	301	420
	Rate	3.3	3.3	5.4	5.3	7.3
Western Australia	No.	92	91	87	84	76
	Rate	2.6	2.5	2.3	2.2	2.0
Tasmania	No.	59	95	99	72	98
	Rate	2.7	4.4	4.7	3.4	4.6
Northern Territory	No.	5	..	2	6	2
	Rate	13.9	..	5.3	14.2	4.8
Total ..	No.	3,494	3,243	3,408	3,469	4,043
	Rate	6.0	5.5	5.6	5.6	6.4

(ii) *Decrease in Rate since 1861.* The figures in the preceding table show that the rate of committals for serious crime has increased slightly during the last five years, but if the comparison be carried further back, it will be found that there has been a very considerable improvement. This will be evident from an examination of the following figures, which show the rate of committals per 10,000 persons in Australia at various periods since 1861 :—

RATE OF COMMITTALS, AUSTRALIA, 1861 TO 1928.

Year	1861.	1871.	1881.	1891.	1901.	1911.	1921.	1928.
Committals per 10,000 inhabitants	22	14	12	11	8	6	7	6

The decline in proportion to population since 1861 has therefore been about 73 per cent.

§ 3. Superior Courts.

1. *Convictions at Superior Courts.*—The number of convictions at superior courts with the rate per 10,000 of the population is given below for each of the years 1924 to 1928 :—

SUPERIOR COURTS.—CONVICTIONS, 1924 TO 1928.

State.		1924.	1925.	1926.	1927.	1928.
New South Wales	{ No.	1,002	(a)1,060	(b)744	877	846
	{ Rate	4.5	(c)3.1	3.2	3.7	3.5
Victoria	{ No.	401	510	461	474	521
	{ Rate	2.4	3.1	2.7	2.7	3.0
Queensland	{ No.	222	234	269	259	244
	{ Rate	2.7	2.7	3.1	2.9	2.7
South Australia	{ No.	104	123	174	196	264
	{ Rate	2.0	2.3	3.1	3.4	4.6
Western Australia	{ No.	64	67	64	61	51
	{ Rate	1.8	1.8	1.7	1.6	1.3
Tasmania	{ No.	53	66	69	37	70
	{ Rate	2.5	3.1	3.3	1.8	3.3
Northern Territory	{ No.	1	2	..	..	4
	{ Rate	2.8	5.4	..	..	9.5
Total	{ No.	1,847	2,062	1,781	1,904	2,000
	{ Rate	3.2	2.7	2.9	3.1	3.2

(a) Eighteen months ended 30th June, 1926.

(b) Year ended 30th June following.

(c) Equivalent annual rate.

The rate in 1901 was 4.6 per 10,000, and the decrease to the end of 1928 was, therefore, about 32 per cent.

In considering the above figures allowance must be made for the various factors enumerated in a preceding paragraph. South Australia, Western Australia, and Victoria, it will be noted, show the smallest proportion of serious crime, while the rates for New South Wales and the Northern Territory are the highest, the figures for the latter, however, owing to the particular conditions prevailing there being abnormal.

2. *Offences for which Convictions were recorded at Superior Courts.*—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1924 to 1928. Owing to lack of

uniformity in the presentation of the returns the information is confined to the chief offences against the person only.

SUPERIOR COURTS.—CONVICTIONS, SERIOUS CRIME, AUSTRALIA, 1924 TO 1928.

Offences.	1924.	1925.	1926.	1927.	1928.
Murder, and attempts at ..	21	31	24	30	25
Manslaughter ..	13	10	13	15	17
Rape, and attempts at ..	5	8	15	14	11
Other offences against females ..	100	120	125	130	159
" " " the person ..	217	253	235	224	222
Total ..	356	422	412	413	434

The total convictions for similar offences in 1901 amounted to 432. Stated according to the proportion per 10,000 of mean population, the rate in 1928 amounted to 0.69, as compared with a rate of 1.14 in 1901, the decrease for the period amounting, therefore, to about 40 per cent.

3. **Habitual Offenders.**—Some account of the methods adopted in each State in connexion with habitual offenders is given in preceding Year Books (see No. 22, pp. 469–70), but this information cannot be repeated in this issue.

4. **Capital Punishment.**—The table below gives the number of executions in each State during the period 1924 to 1928 :—

EXECUTIONS, 1924 TO 1928.

State.	1924.	1925.	1926.	1927.	1928.
New South Wales ..	2	..	..	2	..
Victoria ..	1	..	..	..	..
Queensland ..	..	..	..	..	..
South Australia ..	..	..	..	2	..
Western Australia ..	..	..	3	1	1
Tasmania ..	..	..	..	..	..
Total ..	3	..	3	5	1

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in some of the Australian States, the penalty has been but sparingly inflicted during the last few years. Juries are reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

Under the Criminal Code Amendment Act of 1922, capital punishment was abolished in Queensland.

During the period 1861 to 1880 the annual average number of executions in Australia was 9, from 1881 to 1900 the average was 6, for the period 1901 to 1910 the figure was 4, from 1911 to 1920 it was 2, while the average for the last five years was over 2.

§ 4. Prisons.

1. **Prison Accommodation and Prisoners, 1928.**—The table below shows the number of prisons in each State, the accommodation therein, and the number of prisoners in confinement at the end of 1928 :—

PRISON ACCOMMODATION AND PRISONERS, 1928.

State.	Number of Prisons.	Accommodation in—		Prisoners at End of Year.
		Separate Cells.	Wards.	
New South Wales	23	(a) 2,233	..	1,699
Victoria	14	1,274	419	934
Queensland	7	557	86	365
South Australia	14	709	240	403
Western Australia	21	616	561	236
Tasmania	1	95	3	73
Northern Territory	3	..	61	18
Total	83	5,484	1,370	3,728

(a) Total accommodation.

The figures refer to prisoners under sentence and are exclusive of aborigines.

2. **Prisoners in Gaol, 1924 to 1928.**—The number of prisoners in gaol at the 31st December in each of the years 1924 to 1928 is given below. As stated above, the figures refer to prisoners under sentence, and are exclusive of aborigines. A separate line is added in each instance showing the proportion per 10,000 of the population.

PRISONERS IN GAOL, 1924 TO 1928.

State.		1924.	1925.	1926.	1927.	1928.
New South Wales	Number ..	1,411	1,404	1,429	1,682	1,699
	Proportion ..	6.3	6.2	6.1	7.0	7.0
Victoria ..	Number ..	749	894	915	883	934
	Proportion ..	4.6	5.3	5.4	5.1	5.3
Queensland ..	Number ..	230	295	366	353	365
	Proportion ..	2.8	3.5	4.2	4.0	4.0
South Australia	Number ..	250	280	326	312	403
	Proportion ..	4.7	5.1	5.8	5.5	7.0
Western Australia	Number ..	201	219	208	221	236
	Proportion ..	5.6	5.9	5.5	5.7	5.9
Tasmania ..	Number ..	74	94	81	85	73
	Proportion ..	3.4	4.4	3.8	4.0	3.4
Northern Territory	Number ..	13	5	2	6	18
	Proportion ..	36.1	13.6	5.3	14.2	42.8
Total ..	Number ..	2,928	3,191	3,327	3,542	3,728
	Proportion ..	5.0	5.4	5.5	5.7	5.9

The proportion to population of prisoners in gaol under sentence has risen slightly in Australia during the last five years, but, if the comparison be carried farther back, the position is seen to be more favourable, the proportion in 1891 being as high as 16 per 10,000.

3. **Improvement of Penological Methods.**—In previous issues of the Official Year Book a more or less detailed account was given of the improvements effected in each State during recent years in regard to methods of prison management (see Official Year Book 22, pp. 471-4), but this information cannot be repeated in the present volume.

§ 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during the year 1928 are given in the table hereunder. Particulars for earlier years will be found in preceding issues of the Official Year Book.

LOWER COURTS.—CIVIL CASES, 1928.

State.	1928.	State.	1928
New South Wales	{ Cases No. 88,033 Amount £ 368,242	Western Australia	{ Cases No. 22,364 Amount £ 139,571
Victoria..	{ Cases No. 103,906 Amount £ 680,151	Tasmania	{ Cases No. 9,504 Amount £ 71,580
Queensland	{ Cases No. 27,394 Amount £ 255,106	Total	{ Cases No. 288,564 Amount £ 1,771,505
South Australia	{ Cases No. 37,363 Amount £ 256,855		

The figures just given represent the returns from Petty Sessions Courts in New South Wales and Victoria, the Petty Debts Courts in Queensland, the Local Courts of South Australia and Western Australia, and the Courts of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during the year 1928. Particulars for previous years will be found in preceding issues.

The New South Wales returns refer to the total amounts of judgments in the District Courts, and are exclusive of judgments signed in the Supreme Court, for which the amount is not available.

SUPERIOR COURTS.—CIVIL CASES, 1928.

State.	1928.	State.	1928.
New South Wales	{ Causes No. 2,173 Amount £ 335,072	Western Australia	{ Causes No. 394 Amount £ 73,015
Victoria..	{ Causes No. 1,143 Amount £ 372,119	Tasmania	{ Causes No. 540 Amount £ 27,522
Queensland	{ Causes No. 242 Amount £ 18,392	Total	{ Causes No. 4,679 Amount £ 878,612
South Australia	{ Causes No. 187 Amount £ 52,492		

3. **Divorces and Judicial Separations.**—The number of divorces and judicial separations in each State during the period 1924 to 1928 is shown below. The figures refer in the case of divorces to decrees made absolute in each year and include decrees for nullity of marriage.

DIVORCES AND JUDICIAL SEPARATIONS, 1924 TO 1928.

State.	1924.		1925.		1926.		1927.		1928.	
	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.
New South Wales	838	7	1,071	11	834	12	1,068	20	921	6
Victoria	399	2	445	1	466	2	513	2	481	..
Queensland	105	..	85	2	99	1	64	..	117	2
South Australia	77	..	85	..	71	1	97	..	113	..
Western Australia	89	..	121	..	127	..	103	..	141	1
Tasmania	20	..	37	..	34	..	51	..	55	..
Northern Territory	..	..	..	..	..	..	..	..	..	..
Total	1,528	9	1,844	14	1,631	16	1,896	22	1,828	9

The average annual number of divorces and judicial separations in Australia at decennial periods from 1871 to 1920 and during the octennium 1921-28 was as follows:—

DIVORCES AND JUDICIAL SEPARATIONS.—AUSTRALIA, 1871 TO 1928.

	1871-1880.	1881-90.	1891-1900.	1901-10.	1911-20.	1921-28.
Averages	29	70	358	401	707	1,639.

The bulk of the divorces and judicial separations refer to New South Wales and Victoria, the Acts of 1899 and 1889 in the respective States having made a separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year. The comparison is, however, quite valueless, as there is no necessary connexion between the figures.

4. **Probates.**—Information in regard to probates and letters of administration will be found under § 8, Chapter VIII. Finance.

5. **Bankruptcies.**—Particulars relating to bankruptcy in each State up to the end of the year 1927 were incorporated under this heading in preceding issues of the Official Year Book. Under the terms of the Bankruptcy Act 1924-28 jurisdiction in insolvency was taken over by the Commonwealth from 1st August, 1928. The Act constitutes each State a single bankruptcy district, excepting in the case of New South Wales, which includes the Federal Capital Territory, and Queensland, which has been divided into three districts corresponding to the three Supreme Court districts in that State. Operations under the Act for the year ended 31st July, 1929, are given in the table hereunder.

COMMONWEALTH BANKRUPTCY ACT RETURNS—1928-29.

Heading.	N.S.W.	Vic.	Qld.	S. Aust.	W. Aust.	Tas.	Australia.
Sequestrations .. {							
Number ..	446	300	181	54	66	27	1,074
Liabilities £	570,215	419,005	144,812	70,284	54,641	11,297	1,270,204
Assets £	266,550	123,472	72,920	29,034	37,548	4,445	533,969
Compositions, etc., after Bankruptcy {							
Number ..	..	..	..	2	..	5	7
Liabilities £	..	..	..	3,063	..	5,079	8,142
Assets £	..	..	..	222	..	1,211	1,433
Compositions, etc., without Bankruptcy {							
Number ..	33	15	7	248	253	1	557
Liabilities £	84,618	2,502	3,892	263,915	517,385	3,277	875,589
Assets £	73,878	3,061	2,365	228,000	863,310	1,026	1,171,640
Deeds of arrangement .. {							
Number ..	218	159	76	2	33	19	507
Liabilities £	479,826	1,175,992	175,714	5,635	52,873	14,721	1,904,761
Assets £	491,852	1,102,766	149,877	7,430	109,069	13,908	1,874,902
Total .. {							
Number ..	697	474	264	306	352	52	2,145
Liabilities £	1,134,659	1,597,499	324,418	342,847	624,899	34,374	4,058,696
Assets £	832,280	1,229,299	225,162	264,686	1,009,927	20,590	3,581,944

No transactions were recorded for the year in the Northern Territory. The Commonwealth Attorney-General's Report states that comparative tables have not been prepared in relation to State bankruptcy or insolvency for past years, as the methods of collection and presentation do not afford a reliable common basis. It is also pointed out that the procedure in certain States has been largely influenced by the procedure in force prior to the passing of the Commonwealth Act, and that, therefore, no particular significance attaches to the large number of compositions &c. in South Australia and Western Australia.

6. **High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a Federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction. The powers of the Court are defined in Chapter III. of the Constitution Act and in the Judiciary Acts of 1903-27. At present the Court consists of a Chief Justice and four other judges. Sittings of the Court are held in the capitals of the various States as occasion may require. The High Court also functions

as a Court of Appeal for Australia. The following statement shows the transactions of the High Court for the year 1928. Figures for previous years are given in preceding issues.

COMMONWEALTH HIGH COURT.—TRANSACTIONS, 1928.

Original Jurisdiction.	Items.	Appellate Jurisdiction.	Items.
Number of writs issued ..	71	Number of appeals set down for hearing ..	65
Number of causes entered for trial ..	7	Number allowed ..	17
Verdicts for plaintiffs ..	3	Number dismissed ..	37
Verdicts for defendants ..	1	Otherwise disposed of ..	10
Otherwise disposed of ..	29		
Amount of judgments ..	£5,898		

The fees collected in 1928 amounted to £730.

During the year 1928 the Court dealt also with other matters as follows:—

Appeals from Assessments under the Taxation Assessment Acts, 31; Special cases stated for the opinion of the Full Court, 6; Applications for Prohibition, 6.

7. **Commonwealth Court of Conciliation and Arbitration.**—A more or less detailed statement regarding the operation of this Court, which was established under the provisions of the Commonwealth Conciliation and Arbitration Act of 1904–26, will be found in Chapter XIII.

§ 6. Cost of Administration of Justice.

1. **Expenditure by the States.**—The table below shows the expenditure from Consolidated Revenue during the year 1928 in connexion with the administration of justice in each of the States. Expenditures on police and on prisons are given on separate lines. With regard to the figures quoted for “other” expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large.

STATE EXPENDITURE ON JUSTICE, 1928.

State.	Expenditure.	Per Head of Population.
	£	s. d.
New South Wales ..	{ Police 1,650,285	13 7
	{ Gaols 262,419	2 2
	{ Other 462,572	3 10
Victoria ..	{ Police 880,729	10 1
	{ Gaols 113,252	1 4
	{ Other 297,613	3 5
Queensland ..	{ Police 595,490	13 1
	{ Gaols 40,132	0 11
	{ Other 199,478	4 5
South Australia ..	{ Police 315,465	10 11
	{ Gaols 49,659	1 9
	{ Other 73,745	2 7
Western Australia ..	{ Police 268,830	13 6
	{ Gaols 28,711	1 5
	{ Other 104,724	5 3
Tasmania ..	{ Police 94,059	8 11
	{ Gaols 11,675	1 1
	{ Other 29,125	2 9
Northern Territory(a) ..	{ Police 22,738	108 1
	{ Gaols 6,460	30 9
	{ Other 4,637	20 2
Total ..	{ Police 3,827,596	12 2
	{ Gaols 512,308	1 8
	{ Other 1,171,894	3 9

(a) See 2, Federal Expenditure, following.

Owing to the smallness of the white population, large area to be policed, and cost of supplies, transport, etc., the figures for the Northern Territory must necessarily appear somewhat abnormal.

The total expenditure in connexion with the administration of justice in the various States has risen from 10s. per inhabitant in 1901 to 17s. 7d. in 1928. Police expenditure increased by 6s. 5d. per head, the average for gaols by 6d. per head, while the expenditure on courts and the remaining machinery of justice increased by 8d. per head during the period. Increased salaries and allowances, and the heavier cost of materials and equipment were largely responsible for the rise in the rate per head during the last few years.

2. Federal Expenditure.—(i) *High Court*. With the exception of that for the Northern Territory, the expenditure shown in the foregoing tables is that incurred by the State Governments only, and does not include expenditure in connexion with the Federal High Court, which is given hereunder for the period 1923–24 to 1928–29:—

EXPENDITURE ON FEDERAL HIGH COURT, 1923–24 TO 1928–29.

Year.				Amount.	Year.				Amount.
				£					£
1923–24	..	..	..	35,645	1926–27	..	..	..	36,494
1924–25	..	..	..	34,769	1927–28	..	..	..	35,010
1925–26	..	..	..	35,500	1928–29	..	..	..	36,546

(ii) *Total Expenditure*. Other items of expenditure during 1928–29 by the Commonwealth Attorney-General's Department include—Secretary's office, £24,389; Crown Solicitor, £29,392; Court of Conciliation and Arbitration, £26,641; Public Service Arbitrator, £4,465; Investigation Branch, £10,951; Bankruptcy Administration £20,941; Reporting Branch, £10,820. Including the High Court expenditure but excluding that in connexion with Patents and Copyright, the total expenditure by the federal law authorities in 1928–29 amounted to £195,867.

CHAPTER XI.

PUBLIC BENEVOLENCE.

§ 1. Introductory.

Charity and charitable effort in Australia may be classified under three headings, viz.:—(a) State; (b) public; (c) private. To the first belong all institutions wholly provided for by the State, such as the principal hospitals for the insane in the various States, the Government hospitals in Western Australia, and the Government asylums for the infirm in New South Wales. The second class comprises public institutions of two kinds, viz.:—(i) those partially subsidized by the State or State endowed, but receiving also private aid, and (ii) those wholly dependent upon private aid. To the former division belong such institutions as the principal metropolitan hospitals. In the latter are included institutions established and endowed by individuals for the benefit of the needy generally. All charitable movements of a private character are included in the third group. A more or less accurate statistical account is possible in classes (a) and (b), but in regard to (c) complete tabulation is, for obvious reasons, impossible. Owing to differences in the method and date of collection and tabulation it is impossible to bring statistics of charitable institutions to a common year.

No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. Moreover, although Old-age Pensions, Invalid Pensions, and Maternity Allowances are paid by the Commonwealth, the payments are looked upon rather in the light of a citizen's right than as a charity. Reference to these matters will be found in § 6 and 7 of Chapter VIII. "Finance."

From time to time relief funds have been organized for famine-stricken countries in various parts of the world, or for places where plagues, flood, fire, or earthquake have shown the need of urgent relief. Special funds were also raised for persons disabled or bereaved through war. Complete statistical information in regard to these forms of charity is not, however, available. It may be mentioned that the daily Press frequently accepts the duty of collectorship in charity appeals. In regard to subscriptions to the various patriotic funds which were instituted in consequence of the war, the total for Australia is estimated to exceed £12,500,000 sterling.

§ 2. The Larger Charities of Australia.

1. *General Hospitals.*—(i) *General.* All the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for infectious diseases, consumptives, women, children, incurables, etc.

The particulars given herein refer to general hospitals at the latest available date, and include all institutions affording general hospital relief.

(ii) *Principal Hospitals in each State.* In previous issues of the Official Year Book (See No. 22, pp. 481–2) particulars respecting staff, accommodation, etc., of each of the principal hospitals were given, but owing to considerations of space, are not included in this issue.

(iii) *Number, Staff, and Accommodation, 1928.* Details regarding the number of hospitals, staffs, and accommodation for the year 1928, or nearest available year, are given in the appended table:—

GENERAL HOSPITALS.—NUMBER, STAFFS, AND ACCOMMODATION, 1928.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter. (a)	Total.
Number of Hospitals—								
Government ..	4	..	1	11	26	3	3	48
Other ..	161	55	109	36	48	13	2	424
Total ..	165	55	110	47	74	16	5	472
Medical Staff—								
Males ..	1,376	(b) 116	{ 301 15	{ 177 5	50	29	1	}
Females ..								
Total ..	1,376	(b) 116	316	182	50	29	1	2,070
Nursing Staff and Attendants—								
Males ..	112	2,175	{ 378 2,208	{ 102 958	124	2	2	}
Females ..	3,344							
Total ..	3,456	2,175	2,586	1,060	995	257	14	10,543
Accommodation—								
Number of dormitories, wards, etc.	1,266	462	707	412	320	148	10	3,325
Capacity, in cubic feet	9,745,220	5,382,538	4,763,533	2,432,033	2,106,011	1,026,014	31,600	25,486,949
Number of beds, etc.	8,525	4,160	4,169	1,907	2,025	769	83	21,638
Cubic feet to each bed	1,143	1,294	1,143	1,275	1,040	1,334	381	1,178

(a) Previous year's figures.

(b) Salaried staff only.

(iv) *Patients Treated.* The table hereunder furnishes particulars respecting patients treated. In addition to the facilities provided in the ordinary wards, a considerable amount of accommodation for certain classes of cases is furnished in out-door or verandah sleeping places, and this can be augmented; full particulars in connexion with these are not available. So far as the returns show, there were 1,336 out-door beds in New South Wales, 58 in Queensland, 169 in South Australia, 45 in Western Australia, 61 in Tasmania, and 42 in the Northern Territory. These figures are not included in the totals given in the table above.

GENERAL HOSPITALS.—PATIENTS TREATED, 1928.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter. (a)	Total.
Indoor Relief — Distinct Persons Treated:								
Males ..	75,112	27,257	37,048	12,484	14,858	6,716	269	173,744
Females ..	73,349	21,013	25,677	12,264	12,260	7,191	123	151,886
Total ..	148,461	48,270	62,725	24,748	27,127	13,907	392	325,630
Inmates at beginning of year—								
Males ..	3,332	1,613	1,655	604	777	259	23	8,263
Females ..	3,059	1,197	1,099	501	533	289	5	6,683
Total ..	6,391	2,810	2,754	1,105	1,310	548	28	14,946

(a) Previous year's figures.

(b) Total cases.

GENERAL HOSPITALS.—PATIENTS TREATED, 1928—*continued.*

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter. (d)	Total.
Admissions and Re-admissions during year—								
Males	71,780	25,644	35,393	12,085	14,081	6,457	246	165,686
Females	70,290	19,816	24,578	11,977	11,736	6,902	118	145,417
Total	142,070	45,460	59,971	24,062	25,817	13,359	364	311,103
Discharges—								
Recovered :								
Males	54,279	22,851	32,264	5,869	6,144	5,846	219	127,472
Females	56,792	18,004	22,766	7,255	6,285	6,380	101	117,583
Total	111,071	f 40,855	f 55,030	13,124	12,429	f 12,226	320	245,055
Believed :								
Males	10,798	..	..	4,287	6,547	..	..	21,612
Females	8,595	..	..	3,860	4,693	..	..	16,648
Total	19,393	i	i	7,627	11,240	i	..	38,260
Unrelieved or Incurable :								
Males	2,210	66	724	673	407	227	..	4,307
Females	2,009	34	531	600	289	277	..	3,740
Total	4,219	e 100	1,255	1,273	696	504	..	8,047
Not stated or Indefinite :								
Males .. ..	..	401	259	291	..	11	..	962
Females .. ..	..	365	195	128	..	7	..	695
Total .. ..	..	g 766	h 454	419	..	18	..	1,657
Deaths—								
Males	4,304	2,299	1,987	928	975	360	19	10,852
Females	2,771	1,359	984	571	475	247	6	6,413
Total	7,075	3,658	2,951	1,499	1,450	607	25	17,265
Inmates at end of year—								
Males	3,521	1,640	1,834	661	785	272	31	8,744
Females	3,182	1,251	1,201	564	527	280	16	7,021
Total	6,703	2,891	3,035	1,225	1,312	552	47	15,765
Average Daily Number Resident—								
Males	c	c	c	648	c	293	29	c
Females	c	c	c	584	c	321	17	c
Total	7,381	2,863	2,925	1,232	1,309	614	46	16,370

(e) Not available.
(f) Including relieved.

(d) Previous year's figures.
(g) Includes unrelieved.
(i) Included in recovered.

(e) Incurable only.
(h) Removed to other institutions.

(v) *Summary for Five Years, 1924 to 1928.* Returns for the last five years of the number of hospitals in Australia, admissions, patients treated, deaths, and expenditure, are given in the following table. Figures for general hospitals only are tabulated, since the working of "special" institutions is not properly comparable with those which treat every class of case.

GENERAL HOSPITALS.—SUMMARY, AUSTRALIA, 1924 TO 1928.

Particulars.	1924.	1925.	1926.	1927.	1928.
Number of institutions ..	435	450	458	470	472
Number of beds ..	19,986	20,718	20,784	21,657	21,638
Admissions during year ..	237,846	251,379	274,577	287,662	311,103
Indoor patients treated ..	249,786	264,311	287,582	301,849	325,630
Deaths ..	14,784	15,125	15,912	16,287	17,265
Expenditure ..	£ 2,800,518	3,090,546	3,404,622	3,656,890	3,862,048

In addition to those admitted to the institutions, there are large numbers of out-patients. The exact number of these cannot be given, but a rough estimate of distinct cases places the total at about 700,000.

(vi) *Revenue and Expenditure.* The revenue and expenditure for the year 1928 were as follows :—

GENERAL HOSPITALS.—REVENUE AND EXPENDITURE, 1928.

Particulars.	N.S.W.	Vic.	Q'land. (a)	S. Aust.	W. Aust.	Tas.	N. Ter. (b)	Total.
	£	£	£	£	£	£	£	£
Revenue—								
Fees of patients, etc.	261,667	96,351	152,405	71,664	86,446	38,308	700	707,541
Government grants	853,984	149,656	286,208	226,003	129,086	54,675	5,693	1,705,305
Other	634,291	384,453	286,303	72,778	58,934	11,043	..	1,447,802
Total ..	1,749,942	630,460	724,916	370,445	274,466	104,026	6,393	3,860,648
Expenditure—								
Salaries and Main- tenance ..	1,226,181	485,097	646,258	258,708	256,657	72,306	4,733	2,949,940
Buildings ..	454,873	78,963	24,282	99,128	10,491	5,698	960	674,393
Other	137,847	20,595	28,420	14,409	12,185	24,259	..	237,715
Total ..	1,818,901	584,655	698,960	372,243	279,333	102,263	5,693	3,862,048

(a) Includes also Maternity Hospitals.

(b) Previous year's figures.

2. *Benevolent and Destitute Asylums.*—(i) *General.* There has been a great increase in recent years in the amount of aid provided for the aged. Two elements, each of them independent of the growth of population, have influenced this increase. One is, that the general age of the community has advanced—the large flow of immigration of sixty and seventy years ago having been mostly of persons in the prime of life; the other is the increased regard paid in all British communities to the well-being of the helpless. In Australia numerous establishments have been founded for the housing and protection of persons no longer able to care for themselves. The institutions are supported by Government and municipal aid, public subscriptions, charity performances, bequests, etc.; and in many cases relatives of indigent and afflicted persons contribute to their maintenance.

The impossibility of an entirely satisfactory statistical tabulation in regard to all forms of charitable aid is especially marked in the case of benevolent institutions, since the conditions under which they have been established in the different centres in Australia have resulted in differences in the classes of cases treated by them. For example, in Western Australia, the Home for Destitute Women includes a maternity ward, for which the statistics are not separately kept. Since the chief function of the institution is aid to the destitute, it has been included amongst benevolent asylums. In Victoria, although several of the hospitals were also benevolent asylums, a separation was effected and asylum patients were transferred to appropriate institutions. In South Australia, the Destitute Asylum includes lying-in and children's departments.

(ii) *Principal Institutions.* Particulars respecting the accommodation and the numbers of inmates of the principal institutions were published in previous issues of the Official Year Book (See No. 22, p. 485), but owing to considerations of space cannot be repeated herein.

(iii) *Revenue and Expenditure.* Details regarding revenue and expenditure for the year 1928 are given in the following table :—

BENEVOLENT ASYLUMS.—REVENUE AND EXPENDITURE, 1928.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
Revenue—							
Government aid ..	152,648	35,397	58,117	13,008	13,677	11,548	284,395
Municipal aid ..	..	868	..	..	..	..	868
Public subs., legacies, etc.	1,679	16,806	310	3,878	..	..	22,673
Fees ..	19,840	22,973	1,519	16,208	14,815	4,803	80,158
Other ..	4,610	7,208	3,512	1,018	..	2,058	18,406
Total ..	178,777	83,252	63,458	34,112	28,492	18,409	406,500
Expenditure—							
Buildings ..	4,065	8,719	296	5,017	..	492	18,589
Maintenance ..	172,977	66,574	59,070	28,470	28,492	13,130	368,713
Other ..	6,456	5,414	3,412	377	..	4,787	20,446
Total ..	183,498	80,707	62,778	33,864	28,492	18,409	407,748

3. *Orphanages, Industrial Schools, etc.*—(i) *General.* The organization of charitable effort varies greatly in regard to orphans and waifs. In many institutions, shelter and some form of industrial training are offered to destitute children of all classes whether orphans or not, while some of those styled orphanages do not confine their relief strictly to orphans. The expenditure on orphanages in 1928 was approximately £220,000.

(ii) *Principal Institutions.* Particulars concerning the principal institutions in each State were published in preceding Year Books (See No. 22, p. 486), but considerations of space prevent their repetition herein.

(iii) *Transactions of State Departments.* The following table summarizes the transactions in 1928 of State Departments for the relief of neglected children :—

STATE RELIEF OF NEGLECTED CHILDREN.—SUMMARY, 1928.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Number of children in institutions, boarded out, or on probation—							
Males	3,071	4,046	1,372	681	504	332	10,006
Females	2,602	3,450	992	481	387	253	8,165
Total	5,673	7,496	2,364	1,162	891	585	18,171
Number of children boarded out with their own mothers and female relatives not included in above figures—							
Males	10,125	9,904	2,864	152	..	..	25,873
Females			2,715	113	..	..
Total	10,125	9,904	5,579	265	..	..	25,873
Total children under State control ..	15,798	17,400	7,943	1,427	891	585	44,044
Gross cost to State of children's relief ..	£ 543,626	£ 433,838	£ 200,586	£ 54,921	£ 26,963	£ 16,130	£ 1,276,064
Receipts from parents' contributions, etc. ..	23,720	16,476	12,198	2,289	5,778	1,277	61,738
Net cost	519,906	417,362	188,388	52,632	21,185	14,853	1,214,326

4. *Lepers.*—Isolation hospitals for the treatment of lepers have been established in New South Wales (Little Bay); Queensland (Peel Island, near Brisbane); Western Australia (near Cossack); and the Northern Territory (near Darwin). At the end of 1929 there were 20 cases in residence at Little Bay, 64 at Peel Island, 16 in Western Australia and 23 in North Australia. During the year 1929 a total of 16 cases of leprosy was reported in Australia, of which 6 were recorded in Queensland, 1 in New South Wales, 4 in Western Australia, and 5 in North Australia. In 1928 there were 7 deaths from this disease, and in 1929 the number of deaths recorded was 4, 1 in New South Wales, 2 in Queensland and 1 in Western Australia.

5. *Hospitals for the Insane.*—(i) *General.* The method of compiling insanity statistics has been fairly uniform throughout the States, but differences in diagnosis of the early stages of the disease introduce an element of uncertainty which considerably affects the value of comparisons.

(ii) *Hospitals, Staff, etc., 1928.* Particulars regarding the number of institutions, medical and nursing staff, and accommodation are given in the appended table for the year 1928 :—

HOSPITALS FOR THE INSANE.—NUMBER, STAFFS, ACCOMMODATION, 1928.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Number of Institutions—							
Government	11	8	3	1	4	1	28
Private	3	(b) 4	..	..	1	..	8
Total	14	12	3	1	5	1	36
Medical Staff—							
Males	26	28	6	4	4	3	71
Females	2	..	1	..	..	..	3
Total	28	28	7	4	4	3	74
Nursing Staff and Attendants—							
Males	839	674	273	93	132	67	2,078
Females	775	647	210	85	82	74	1,873
Total	1,614	1,321	483	178	214	141	3,951
Accommodation—							
Number of dormitories ..	(a)	1,351	584	511	44	419	(a)
Capacity, in cubic feet ..	(a)	4,081,776	1,993,452	900,423	714,714	806,680	(a)
Number of beds	7,486	5,818	2,854	1,375	1,186	743	19,467
Cubic feet to each bed ..	(a)	702	698	655	603	1,199	(a)

(a) Not available.
not available.

(b) Cases at the end of the year numbered 86; other particulars

(iii) *Patients, 1928.* Information regarding patients treated, deaths, etc., for the year 1928 is given in the table hereunder :—

HOSPITALS FOR THE INSANE.—PATIENTS, DEATHS, ETC., 1928.

Particulars.	N.S.W.	Vic. (a)	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Admissions and re-admissions during year—							
Males	905	483	205	153	122	37	1,905
Females	732	304	109	127	57	33	1,542
Total	1,637	877	494	280	179	70	3,587
Discharges—Recovered—							
Males	296	85	132	46	35	7	601
Females	323	101	89	30	16	16	575
Total	619	186	221	76	51	23	1,176
Relieved and unrelieved—							
Males	127	47	26	30	27	13	270
Females	108	55	20	24	8	8	223
Total	235	102	46	54	35	21	493

(a) Exclusive of four private licensed houses.

HOSPITALS FOR THE INSANE.—PATIENTS, DEATHS, ETC., 1928—*continued*.

Particulars.	N.S.W.	Vic. (a)	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Absconders not retaken—							
Males	9	6	..	1	..	..	16
Females .. .. .	..	..	..	..	..	..	..
Total	9	6	..	1	..	..	16
Deaths—							
Males	335	248	138	51	50	23	845
Females	233	194	72	54	20	11	584
Total	568	442	210	105	70	34	1,429
Number of patients on books at end of year—							
Males	5,011	3,150	1,877	745	816	304	11,903
Females	4,093	3,351	1,155	605	413	311	9,928
Total	9,104	6,501	3,032	1,350	1,229	615	21,831
Average daily number resident—							
Males	4,758	2,694	1,875	735	813	305	11,180
Females	3,793	2,930	1,105	591	383	310	9,112
Total	8,551	5,624	2,980	1,326	1,196	615	20,292
Number of patients on books at end of year per 1,000 of population—							
Males	4.02	3.60	3.87	2.49	3.71	2.83	3.67
Females	3.41	3.78	2.68	2.16	2.22	2.85	3.21
Persons	3.72	3.69	3.31	2.33	3.03	2.84	3.45
Average number of patients resident in hospitals for insane per 1,000 of mean population—							
Males	3.85	3.09	3.90	2.46	3.76	2.90	3.48
Females	3.19	3.33	2.58	2.12	2.09	2.90	2.97
Persons	3.53	3.21	3.28	2.30	2.99	2.90	3.23

(a) Exclusive of four private licensed houses.

In some States persons well advanced towards recovery are allowed to leave the institutions and reside with their relatives or friends, but they are under supervision and their names are kept on the books. The figures for admissions, etc., include absconders captured and re-admitted. Generally, very few escapees succeed in avoiding capture.

(iv) *Summary for Australia, 1924 to 1928.* The table hereunder gives a summary for hospitals for the insane in Australia for each of the five years 1924 to 1928. Licensed houses are included in the number of institutions for Victoria, and in all particulars save expenditure for New South Wales. The figures are exclusive of reception houses and observation wards in gaols. In the case of New South Wales the expenditure figures include cost of Broken Hill patients treated in South Australian hospitals:—

HOSPITALS FOR THE INSANE.—SUMMARY, AUSTRALIA, 1924 TO 1928.

Particulars.	1924.	1925.	1926.	1927.	1928.
Number of institutions	35	36	34	34	36
Number of beds	18,387	18,797	18,885	19,474	19,467
Admissions	3,325	3,441	3,452	3,466	3,537
Discharged as recovered, relieved, etc.	1,638	1,613	1,592	1,576	1,669
Deaths	1,413	1,416	1,459	1,433	1,429
Expenditure	£ 1,494,025	1,649,626	1,629,242	1,666,061	1,706,259

(v) *Number of Insane, 1924 to 1928.* The proportion of insane, as well as the total number returned as under treatment, has changed very little during recent years. The next table gives the number of insane under official care in Australia and the proportion per 1,000 of population for the last five years.

INSANE PERSONS IN INSTITUTIONS, 1924 TO 1928.

State.	1924.	1925.	1926.	1927.	1928.
NUMBER.					
New South Wales	8,231	8,397	8,570	8,898	9,104
Victoria	6,096	6,192	6,329	6,360	6,501
Queensland	2,983	2,983	3,000	3,017	3,032
South Australia	1,248	1,302	1,282	1,306	1,350
Western Australia	1,047	1,088	1,164	1,188	1,229
Tasmania	618	603	615	623	615
Australia	20,223	20,565	20,960	21,392	21,831
PER 1,000 OF POPULATION.					
New South Wales	3.65	3.65	3.64	3.71	3.72
Victoria	3.68	3.67	3.70	3.65	3.69
Queensland	3.57	3.46	3.40	3.36	3.31
South Australia	2.30	2.36	2.26	2.27	2.33
Western Australia	2.87	2.92	3.07	3.03	3.03
Tasmania	2.84	2.78	2.86	2.89	2.84
Australia	3.44	3.43	3.43	3.43	3.45

For the period embraced in the tables Victoria and New South Wales show the highest rate of insanity, roughly 1 in 270 persons. It is stated that this is chiefly owing to the proportionately greater number of the aged in those States. On the other hand, in South Australia a considerably lower insanity rate has prevailed, averaging about 1 in 435, Tasmania being next with an average of about 1 in 350.

A more rational attitude towards the treatment of mental cases has resulted in a greater willingness in recent years to submit afflicted persons to treatment at an earlier stage. Hence an increase in the number of recorded cases does not necessarily imply an actual increase in insanity, and the small increment in the numbers in the first of the immediately preceding tables is probably, if not solely, due to this circumstance.

(vi) *Causes of Insanity.* The proportion of causes of insanity to the total ascertained causes in Australia in the five years 1924 to 1928 shows that hereditary influence has been the chief factor, more than one-fifth of the total ascertained causes coming under this head. Domestic troubles, adverse circumstances, etc., have also been a fruitful source. Cases due to intemperance in drink range from one in 11 to one in 15.

INSANITY.—PERCENTAGES OF CAUSES, AUSTRALIA, 1924 TO 1928.

Causes, Previous History, etc.	1924.	1925.	1926.	1927.	1928.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Domestic trouble, adverse circumstances, mental anxiety ..	13.1	15.0	11.6	9.0	9.6
Intemperance in drink ..	8.0	8.4	9.1	6.8	8.4
Hereditary influence, ascertained; congenital defect, ascertained ..	24.6	22.8	18.5	26.7	22.9
Pregnancy, lactation, parturition and puerperal state, uterine and ovarian disorders, puberty, change of life ..	8.4	7.1	7.1	7.6	6.5
Previous attacks ..	12.9	11.4	12.5	12.4	13.1
Accident, including sunstroke ..	1.3	1.2	1.0	0.8	1.2
Old age ..	10.8	10.1	10.2	12.3	12.4
Venereal disease ..	5.5	5.8	6.1	6.3	5.2
Other causes ascertained ..	15.4	18.2	23.9	18.1	20.7
All ascertained causes ..	100.0	100.0	100.0	100.0	100.0

(vii) *Length of Residence in Hospital.* Information concerning the length of residence of persons who died or were discharged is given in previous Year Books (See No. 22, p. 491), but owing to considerations of space, cannot be included in this issue.

(viii) *Revenue and Expenditure, 1928.* The revenue of Government asylums is small in comparison with their cost, and consists chiefly of patients' fees. The proportion of expenditure borne by the State amounts to about 85 per cent.

HOSPITALS (GOVERNMENT) FOR THE INSANE.—FINANCES, 1928.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
Revenue (Exclusive of Government Grants)—							
Fees of Patients	108,774	61,217	29,200	17,987	14,813	7,400	239,391
Other	3,098	7,447	737	1,152	4,478	471	17,378
Total	111,867	68,664	29,937	19,139	19,291	7,871	256,769
Expenditure—							
Salaries	422,406	283,768	123,321	46,192	60,000	34,152	969,839
Maintenance	249,529	178,503	94,297	45,537	37,002	21,485	626,353
Buildings		45,737	21,406	2,187			69,330
Other	26,564	6,361	..	1,032	4,366	2,414	40,737
Total	698,499	514,369	239,024	94,948	101,368	58,051	1,706,259

6. *Care of the Feeble-minded.*—An account of the treatment of the feeble-minded, supplied by the Public Health Department of Tasmania, appeared in Official Year Book No. 19, pp. 477 and 478. Considerations of space, however, preclude its repetition in the present volume.

7. *Protection of Aborigines.*—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic, and receive food and clothing when they call, whilst others but rarely come under the notice of the Boards. The native race is extinct in Tasmania. The expenditure from Consolidated Revenue in 1928–29 was, New South Wales, £37,970; Victoria, £8,758; Queensland, £63,898; South Australia, £22,767; Western Australia, £31,523; Northern Territory, £10,824; total for Australia, £175,740. In New South Wales the number of aborigines living on reserves in 1928 was 2,276. At the 30th June, 1928, there were 54 full-bloods and 246 three-quarter and half-castes under the care of the Aborigines Protection Board at the chief stations in Victoria. In Queensland in 1927–28 there were 4,195 aborigines permanently resident at the various stations. At the 30th June, 1929, there were 785 inmates, of whom 123 were full-bloods, at mission stations in South Australia, and in Western Australia the aborigines and half-castes supported at similar institutions in the year 1928–29 numbered approximately 700, while an average of 1,403 natives were rationed each month by the Aborigines Department. At the mission stations in the Northern Territory approximately 1,450 full-bloods and 200 half-castes were in residence, but casual assistance and medical attention are given to large numbers of natives every year.

8. *Royal Life Saving Society.*—In each of the State capitals, “centres” of the Royal Life Saving Society have been established. Life preservation is the object of the Society, and its immediate aims are (a) educative and (b) remedial. The encouragement of swimming and life-saving in schools, colleges, clubs, etc., will bring about a more widespread knowledge of these necessary matters, and there is increasing provision of life-belts, reels, lines, and other first-aid appliances on ocean beaches, wharves, and other suitable places. Upwards of 3,000 certificates of proficiency in various grades are issued annually after examination.

9. **Royal Humane Society.**—The Royal Humane Society of Australasia has for its objects (a) to grant awards for skill, promptness, and perseverance in life-saving; (b) to provide assistance in cases of danger and apparent death; (c) to restore the apparently drowned; (d) to collect and circulate the latest information regarding approved methods and apparatus for life-saving. Awards of medals and certificates are made numbering about 100 annually. Upwards of 350 lifebuoys have been provided at various places on the coasts, rivers, lakes, and reservoirs in the various States. Swimming is encouraged amongst school children, and awards are made for proficiency.

10. **Other Charitable Institutions.**—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded range from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods in those that exist for the relief of the aged and the infirm. The institutions not so particularized include asylums for the deaf, dumb, and blind, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies and nursing systems, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, shipwreck relief societies, bush fires and mining accident relief funds, etc.

11. **Total Expenditure on Charities.**—The table below gives the total expenditure on charities in each of the last five years, the figures for the various States being compiled, as far as possible, on the same basis. For the reason given in § 1. 1. the cost of old-age and invalid pensions and of maternity allowances is not included :—

TOTAL EXPENDITURE ON CHARITIES, 1924 TO 1928.

State or Territory.	1924.	1925.	1926.	1927.	1928.
	£	£	£	£	£
New South Wales ..	2,941,515	3,230,625	3,452,596	3,684,996	3,994,265
Victoria ..	1,653,974	1,944,306	2,064,028	2,058,064	2,234,912
Queensland ..	991,753	1,145,535	1,190,863	1,230,830	1,230,506
South Australia ..	621,315	679,088	766,513	806,325	880,514
Western Australia ..	508,809	534,522	551,616	575,133	635,778
Tasmania ..	228,246	237,834	235,169	245,582	261,286
Total ..	6,945,612	7,771,910	8,260,785	8,600,930	9,237,261

The figures include expenditure from Government and private sources of all institutions and societies affording relief, for which particulars are available.

CHAPTER XII.

PUBLIC HYGIENE.

§ 1. Public Health Legislation and Administration.

Reference to the various public health authorities, Commonwealth and State, their functions, and the legislation administered, may be found in previous issues of the Official Year Book (see No. 22, pp. 493 to 495), but considerations of space preclude the repetition of this information herein.

§ 2. Inspection and Sale of Food and Drugs.

Legislation is in force in each State concerning the inspection and sale of food and drugs, the general objects being to secure the wholesomeness, cleanliness, and freedom from contamination or adulteration of any food, drug or article; and the cleanliness of receptacles, places, and vehicles used for their manufacture, storage or carriage. For further particulars in this connexion, and with respect also to the sale and custody of poisons, reference should be made to the preceding issue of the Official Year Book, No. 22, pp. 495-497.

§ 3. Supervision of Dairies, Milk Supply, etc.

1. **General.**—In preceding issues (see No. 22, pp. 497 to 499), allusion is made to the legislation in force in the various States to ensure the purity of the milk supply and of dairy produce generally, but limits of space preclude the repetition of this information in the present issue.

2. **Number of Dairy Premises Registered.**—The following table shows, so far as the particulars are available, the number of dairy premises registered and the number of cattle thereon. Compulsory registration is not in force throughout the whole area of the various States.

DAIRY PREMISES REGISTERED, AND CATTLE THEREON, 1929.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.
Premises registered ..	21,867	23,832	(a)22,457	1,516	(b)	(b)
Cattle thereon ..	970,808	311,175	670,800	9,360	(b)	(b)

(a) Approximate number of dairies operating.

(b) Not available.

§ 4. Prevention and Control of Infectious and Contagious Diseases.

1. **General.**—The provisions of the various Acts in regard to the compulsory notification of infectious diseases and the precautions to be taken against the spread thereof may be conveniently dealt with under the headings—Quarantine; Notifiable Diseases, including Venereal Diseases; and Vaccination.

2. **Quarantine.***—(i) *General.* The Quarantine Act is administered by the Commonwealth Department of Health, and uniformity of procedure has been established in respect of all vessels, persons, and goods arriving from overseas ports or proceeding from one State to another, and in respect of all animals and plants brought from any place outside Australia. In regard to inter-state movements of animals and plants, the Act becomes operative only if the Governor-General be of opinion that Federal action is necessary for the protection of any State or States; in the meantime the administration of inter-state quarantine of animals and plants is left in the hands of the States. The Commonwealth possesses stations in each State for the purposes of human and of animal quarantine.

Further information concerning the chief provisions of the Act and its administration is given in some detail in preceding issues (see No. 22, p. 500).

* From information furnished by the Commonwealth Director-General of Health.

3. Notifiable Diseases.—A. General.—(i) *Methods of Prevention and Control.* Provision exists in the Health Acts of all the States for precautions against the spread, and for the compulsory notification of infectious diseases. When any such disease occurs, the Health Department and the local authorities must at once be notified. In some States notification need only be made to the latter. The duty of giving this notification is generally imposed, first, on the head of the house to which the patient belongs, failing whom on the nearest relative present, and, on his default, on the person in charge of or in attendance on the patient, and on his default, on the occupier of the building. Any medical practitioner visiting the patient is also bound to give notice.

As a rule the local authorities are required to report from time to time to the Central Board of Health in each State as to the health, cleanliness, and general sanitary state of their several districts, and must report the appearance of certain diseases. Regulations are prescribed for the disinfection and cleansing of premises, and for the disinfection and destruction of bedding, clothing, or other articles which have been exposed to infection. Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid, and other infectious diseases within the meaning of the Health Acts are continually being carried out. Regulations are provided in most of the States for the treatment and custody of persons suffering from certain dangerous infectious diseases, such as small-pox and leprosy.

(ii) *Details by States.* In previous Year Books (see No. 22, p. 501) information concerning the notification, etc., of diseases under State headings has been given, but considerations of space preclude its inclusion in this issue.

(iii) *Diseases Notifiable in each State.* In the following statement diseases notifiable in each State and the Federal Capital Territory are indicated by a cross :—

DISEASES NOTIFIABLE UNDER THE HEALTH, ETC., ACTS IN EACH STATE AND THE FEDERAL CAPITAL TERRITORY.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Fed. Cap. Ter.(h)
Acute lobar pneumonia	(c)	+	..	..
Anthrax	+	..	+	+	+	+
Ankylostomiasis	+	+	+
Beri-beri	+
Bilharziasis	+	+	+	+	+	+
Brill's Disease	+	+	+	+	+	+
Bubonic plague	+	+	+	..	+	+
Cerebro-spinal fever	+	+	+	+	+	+
Cerebro-spinal meningitis	+	+	+	..	+	+
Chicken-pox	+	+	+	..	+	+
Cholera
Colonial fever	+	..	+
Continued fever	+
Dengue fever	+	+	..	+	+	+
Diphtheria	+	+	+	+	+	(f)
Dysentery	+	+	+	+	+	..
Encephalitis lethargica	+	+	+	+	+	..
Enteric fever	+	+	+
Erysipelas	+
Favus	+	+
Filariasis	+
Gastro-enteritis, infective	+	..	+
Hæmaturia	+	+(g)
Hydatids	+	+	+	+	+	..
Infantile paralysis	+(c)	+	+	+
Influenza	+	+	+	+	+	+
Leprosy	+
Low fever	+	+	+	..	+	+
Malarial fever	+
Malta fever	+	+
Measles	+	+	+	+	..	+
Membranous croup
Ophthalmia, contagious (including trachoma)	+(c)	+	..	..
Pneumonic influenza	+	+
Polioencephalitis	+	+	+	..	+	+
Poliomyelitis anterior acuta	+	+	+	..	+	+
Puerperal fever	+	+	+	+	+	+
Pulmonary tuberculosis (phthisis)	+
Pyæmia	+	+	+	+	+
Relapsing fever

**DISEASES NOTIFIABLE UNDER THE HEALTH, ETC., ACTS IN EACH STATE
AND THE FEDERAL CAPITAL TERRITORY—continued.**

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Fed. Cap. Ter.(h)
Scabies	+	+	+	+	+	+	+
Scarlet fever	+	+	+	+	+	+	+
Scarlatina	+	+	+	+	+	+	+
Septicæmia	+	+	+	+	+	+	+
Small-pox	+	+	+	+	+	+	+
Tetanus	+	+	+	+	+	+	+
Trichinosis	+	+	+	+	+	+	+
Tuberculosis	+	+	+	+	+	+	+
Tuberculosis in Animals	+	+	+	+	+	+	+
Typhoid	+	+	+	+	+	+	+
Typhus fever	+	+	+	+	+	+	+
Veneral Diseases:—							
Chancroid (soft chancre)	+	+	+	+	+	+	+
Gleet	+	+	+	+	+	+	+
Gonorrhœa	+	+	+	+	+	+	+
Gonorrhœal ophthalmia	+	+	+	+	+	+	+
Infective granuloma of the pudenda	+	+	+	+	+	+	+
Ophthalmia neonatorum	+	+	+	+	+	+	+
Syphilis	+	+	+	+	+	+	+
Venereal warts	+	+	+	+	+	+	+
Whooping cough	+	+	+	+	+	+	+
Yellow fever	+	+	+	+	+	+	+

(a) Notifiable in certain areas only. (b) Primary and secondary stages only. (c) Influenza vera is notifiable, and any febrile toxic-septicæmic condition similar to influenza, including pneumonic influenza. (d) Act not yet in operation. (e) Includes para-typhoid fever. (f) Bacillary and Amœbic. (g) Echinococcus granulosis-cystic stage. (h) Operative from 12th December, 1929.

(iv) *Cases of Infectious Diseases in each State.* The following table compiled by the Commonwealth Department of Health shows for the year ended 31st December, 1929, the numbers of cases of infectious diseases notified in each State and the Federal Capital Territory:—

INFECTIOUS DISEASES IN THE STATES OF AUSTRALIA, 1929.

Disease.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Federal Capital Territory.
Akylostomiasis	*	Nil	9	Nil	Nil	*	*
Anthrax	*	Nil	*	Nil	Nil	Nil	*
Beri-beri	*	*	*	*	Nil	*	Nil
Bilharziasis	*	Nil	Nil	Nil	Nil	Nil	Nil
Cerebro-spinal fever	28	23	8	2	4	4	Nil
Dengue fever	*	*	*	*	1	*	Nil
Diphtheria	4,322	3,256	1,671	329	539	488	21
Dysentery	*	108	2	12	9	*	*
Encephalitis lethargica	26	12	6	6	1	2	Nil
Erysipelas	*	*	74	152	5	*	2
Filariasis	*	*	*	Nil	*	*	*
Hydatids	*	Nil	*	*	*	*	*
Influenza	*	*	*	495	*	*	Nil
Leprosy	1	Nil	6	Nil	4	Nil	Nil
Malaria	*	4	1	3	7	3	Nil
Measles	*	*	*	4,233	*	*	3
Poliomyelitis	240	144	22	8	10	12	Nil
Puerperal fever	44§	49	56	73	20	25	Nil
Scarlet fever	5,229	1,490	482	238	418	314	8
Tetanus	*	6	*	*	Nil	*	*
Tuberculosis	1,203	1,407	376	458	443	176	3
Typhoid fever	433	184	131	57	95	49	Nil
Typhus, endemic	*	*	*	*	13	*	*
Varicella	618†	*	*	999	*	*	*
Whooping cough	*	*	*	497	*	*	*

* Not notifiable. † Notifiable 22nd June to 23rd August, 1929. § Notifiable since 16th August, 1929.

B. Venereal Diseases.—(i) *General.* The prevention and control of venereal diseases are undertaken by the States. Each State has a Venereal Diseases Act, or provisions in the Health Act govern the working of the measures taken to combat these diseases. In every State notification has been made compulsory. A list of notifiable forms of venereal complaints is given in the table on the preceding page. Steps have been taken to ensure free treatment by medical practitioners or in subsidized hospitals. Registered pharmaceutical chemists are allowed to dispense prescriptions only when signed by medical practitioners. Clinics have been established, and, in some cases, beds in public hospitals have been set aside for patients suffering from these diseases.

Penalties may be imposed on a patient who fails to continue under treatment. Clauses are inserted in the Acts which aim at preventing the marriage of any patient or the employment of an infected person in the manufacture and distribution of foodstuffs.

The Commonwealth Government has granted a subsidy of £15,000 per annum to the various States to assist in providing hospital treatment and administrative control. The supervision of this work, in so far as it relates to the expenditure of the subsidy, is undertaken by the Commonwealth Department of Health. In February, 1922, a conference was held to consider the means of securing the best results from this subsidy.

The question of Commonwealth assistance has now been taken up by the Federal Health Council. In the Commonwealth Department of Health, a Division of Tuberculosis and Venereal Disease was established in 1927 with a medical officer as Director.

(ii) *Details by States.* A statement of the provisions in each State, together with certain statistical data, has appeared in previous Year Books (see No. 22, pp. 503 and 504), but cannot be included in this issue.

4. Vaccination.—(i) *Demand for Vaccine.* In New South Wales there is no statutory provision for compulsory vaccination, though in all the other States such provision has been made. Jennerian vaccine for vaccination against small-pox is prepared at the Commonwealth serum laboratories in Melbourne. A moderate demand exists for the vaccine in Victoria, but in the other States the normal requirements are small. During the years 1912, 1913, and 1914 the output of the vaccine in doses from the depot was respectively 65,000, 570,000, and 146,000. The number of doses issued in 1913 was, however, abnormal, and was due to the epidemic of small-pox which broke out in Sydney at the end of June, and was followed by large numbers of vaccinations in each State.

(ii) *Details by States.* In previous issues of the Year Book (see No. 22, pp. 504 and 505) information concerning the provisions in each State was given, but owing to considerations of space cannot be included herein.

5. Commonwealth Serum Laboratories.—The establishment for the preparation of Jennerian vaccine situated at Royal Park, near Melbourne, formerly known as the "Calf Lymph Depot," was in 1918 greatly enlarged by the Commonwealth. The remodelled institution is designated the "Commonwealth Serum Laboratories," and forms a division of the Commonwealth Department of Health. The list of bacteriological preparations produced by the laboratories has been extended to cover a wide range, thus forming a valuable national provision for the protection of public health.

6. Health Laboratories.—The Commonwealth Department of Health has established health laboratories at Rabaul in New Guinea, at Lismore in New South Wales, at Bendigo in Victoria, at Townsville, Toowoomba, Rockhampton and Cairns in Queensland, at Port Pirie in South Australia, and at Kalgoorlie in Western Australia, and arrangements are being made for the organization of similar laboratories in other parts of Australia.

The laboratory at Rabaul which until 1930 was carried on in conjunction with the hookworm campaign, and was working in close co-operation with the health organization of the New Guinea Administration, was transferred to the Administration at the beginning of 1930.

The Bendigo Laboratory was opened in 1922. Besides carrying on the ordinary diagnostic and educational work of a health laboratory, it possesses an X-ray equipment, and undertakes the examination, diagnosis, and treatment of persons suffering from miner's disease and tuberculosis.

The laboratory at Townsville is now carried on as a separate establishment. The laboratory at Toowoomba was opened on 18th December, 1923.

All of these laboratories are undertaking successfully the diagnostic, educative, and research work for which they were created.

By arrangements between the Commonwealth and Western Australian Governments a special medical survey of persons engaged in the mining industry in Western Australia was carried out in 1925-26 by the Commonwealth Health Laboratory at Kalgoorlie, when 4,067 mine employees were examined. A further arrangement provides for the re-examination annually of mine employees in the Kalgoorlie district for a period of three years.

7. Industrial Hygiene.—The Industrial Hygiene Division of the Commonwealth Department of Health was established in December, 1921. Its objects are the collection of reliable data, the investigation of industrial conditions affecting health, and the issue of advice to employers and employees for the improvement of conditions of work and for the safeguarding of health. Publications have been issued dealing with the scope of industrial hygiene, and with health hazards in industry. Expert advice is available to employers and employees, and it is anticipated that the work of the division will be of great value in guiding the development of industry along hygienic lines, and in improving generally the condition of workers. With a view to the adoption of a concerted scheme of action and a uniform basis for standards and records throughout Australia, conferences of delegates from the State Health and Labour Departments and the Commonwealth Department of Health were held in 1922, 1924, and in 1927.

A special article entitled "Industrial Hygiene in Australia" will be found in Official Year Book No. 18, pp. 522 to 555.

8. Public Health Engineering.—A division of sanitary engineering was established in the Commonwealth Department of Health early in 1923. Investigation has been made into numerous sanitary engineering problems affecting Australia, including a number referred to the Department by various State Governments. Advice is given generally on the protection of water supplies, drainage, and other engineering questions affecting health.

In 1927 a special conference convened by this Division was attended by official representatives of Government and municipal authorities concerned with health, water supply, sewerage and similar activities. Numerous papers on public health problems were read and discussed.

9. Veterinary Hygiene and Plant Quarantine.—In 1927 Directors were appointed to control divisions of the Commonwealth Department of Health, which have been created to deal with veterinary hygiene and plant quarantine.

§ 5. Tropical Diseases.

1. General.—The remarkable development of parasitology in recent years, and the increase in knowledge of the part played by parasites in human and animal diseases, have shown that the difficulties in the way of tropical colonization, in so far as these arise from the prevalence of diseases characteristic of tropical countries, are largely removable by preventive and remedial measures. Malaria and other tropical diseases are coming more and more under control, and the improvements in hygiene and the production of new synthetic drugs for treatment which science has accomplished, furnish a new outlook on the question of white settlement in countries formerly regarded as unsuitable for colonization by European races. In Australia, the most important aspect of this matter is at present in relation to such diseases as hookworm, filariasis, dengue fever, and to a lesser extent, malaria, which, although practically unknown in southern Australia, occur in many of the tropical and sub-tropical parts.

Systematic attention is being directed to these diseases and to other aspects of tropical hygiene by the Division of Tropical Hygiene of the Commonwealth Department of Health.

2. **Transmission of Disease by Mosquitoes.**—Information under this heading has appeared in previous issues (see No. 22, pp. 506 and 507), but cannot be repeated in this volume.

3. **Control of Introduced Malaria and Bilharziasis.**—Reference to this subject may be found in previous Year Books (see No. 22, p. 507).

4. **Hookworm.**—In 1911, attention was drawn to the necessity for an investigation into hookworm infection in Queensland, and the view was expressed that notified cases did not accurately indicate the prevalence of the disease. Researches made subsequently tended to support this view.

An investigation made in Papua in 1917 by an officer of the International Board of Health of the Rockefeller Foundation disclosed the fact that half of all natives examined were infected with hookworm disease. In co-operation with the Government of Queensland and the Australian Institute of Tropical Medicine, the survey was extended to Queensland, and a considerable number of cases of hookworm infection was found in certain northern coastal areas. In October, 1919, the Australian Hookworm Campaign was begun. This campaign was supported jointly by the Commonwealth, the International Health Board of the Rockefeller Foundation, the State of Queensland, and the other States in which work in this direction was undertaken. By the end of 1922, the survey of Australia and its dependencies had been completed. The total number of examinations up to 30th September, 1924, including those in Dr. Waite's survey in Papua and the earlier work in Queensland, was as follows:—

People examined for hookworm disease	..	..	394,578
Found to be infected with hookworms	..	..	62,051 (15.7%)

Endemic hookworm infection was found in intermittent areas along the eastern coast of Australia from Cape York to Macksville in New South Wales. The higher summer rainfall in these areas appears to be chiefly responsible for the localization of the infection. It is also found in the vicinity of Broome and Beagle Bay in Western Australia, in the northern part of the Northern Territory, and along the eastern coast of the Gulf of Carpentaria. In the Territory of Papua, 59.2 per cent. of the natives were found to be infected, and in the Territory of New Guinea, 74.2 per cent. There is no endemic hookworm infection in Victoria, South Australia, Tasmania, the interior of Queensland, New South Wales, except the north-eastern part, and Western Australia except the far north.

Metalliferous mines were examined in Victoria, South Australia, New South Wales, Tasmania, and Western Australia, and were found entirely free from hookworm infection. The examination of metalliferous mines in Queensland showed either no infection or a light infection which may have originated chiefly outside the mines. Coal mines in Victoria, Tasmania, and Western Australia were free from infection. Examinations were made in the coal mines of the Newcastle district, and among 1,226 miners examined in about 25 mines only five infected miners were found. In the Ipswich group of coal mines in Queensland, 31.5 per cent. of the miners were infected, and in the Howard-Torbarlea group (Queensland) 75.8 per cent. were infected. Recommendations were made with regard to the correction of the insanitary conditions responsible for these high infection rates.

Wherever operations are carried on by the hookworm campaign, emphasis is placed on the prevention of hookworm disease, in contrast to temporary relief through the cure of existing cases, and much work has been done to improve methods of night-soil disposal, and to teach the people the danger from soil pollution.

In October, 1924, the International Health Board withdrew from the work which was then continued under the direction of the Division of Tropical Hygiene of the Commonwealth Department of Health. From 1st October, 1924, to 30th September, 1929, under the new administration the field units engaged in the investigation examined 157,998 persons, of whom 13,968, or 8.8 per cent., were found to be infected with hookworm.

In October, 1929, the scheme for hookworm control was revised and modified. In both Queensland and New South Wales there are now committees for control which include the State officers responsible for public health and the health of school children respectively; continuity and co-ordination of programme are provided for by entrusting the chairmanship of each of the committees to the Director of the Division of Tropical Hygiene.

In the latter part of 1922, the scope of the campaign was widened to include a malaria and filaria survey in co-operation with the Division of Tropical Hygiene, Commonwealth Department of Health. This work is being carried out as opportunity arises.

Both of the species of hookworm which infest man are found in Australia. They differ in ways important to the practical sanitarian, and the need has been recognized for a new and more practicable method of determining their respective distribution. Such a method has been evolved at the Australian Institute of Tropical Medicine, and is being introduced as part of the routine of hookworm control within Australia.

Several epidemiological and microbiological problems relating to hookworm and other intestinal parasites in tropical and sub-tropical Australia have been investigated by the Australian Institute of Tropical Medicine and the Commonwealth Health Laboratories in Queensland in co-operation with the work of the field units, and useful information has been obtained and applied in regard to the control of hookworm among white people in the coastal tropical and sub-tropical regions of Australia.

5. Australian Institute of Tropical Medicine.—The Australian Institute of Tropical Medicine was founded at Townsville in January, 1910. From 7th March, 1921, to 3rd March, 1930, when it was merged in the School of Public Health and Tropical Medicine, Sydney University, the Institute was administered by the Commonwealth Department of Health, and a full account of its activities from its foundation up to 1922 will be found in Official Year Book No. 15, pp. 1010–1012.

6. School of Public Health and Tropical Medicine, Sydney University.—The Commonwealth Government, under an agreement with the Sydney University, established a School of Public Health and Tropical Medicine at the Sydney University as from 4th March, 1930, for the purpose of training medical graduates and students in the subjects of public health and tropical medicine. The organization of the Australian Institute of Tropical Medicine at Townsville was merged in the new School, and the staff, equipment, and material have been transferred to Sydney.

Since 1922 a number of investigations has been carried out, including the physiology of white population in the tropics, causes of obscure tropical fevers, sociological survey of certain tropical areas of Queensland, the destruction of mosquito larvæ and the control of mosquitoes in the larger centres of population, tropical diseases among the aborigines on Palm Island, leprosy among aborigines in the Northern Territory, prevalence of filariasis in Cairns, Yarrabah Mission Station, Port Douglas, Mossman, and Innisfail, and reputed foci of malaria in tropical Queensland. Courses of instruction in tropical medicine and hygiene commence in May of each year, and continue for four months, and ten publications dealing with various aspects of tropical medicine, etc., have been issued.

7. Royal Commission on National Health, etc.—Information concerning the following subjects may be found in previous Year Books (see No. 22, pp. 509 and 510):—(a) Royal Commission on National Health appointed by the Commonwealth Government in 1924; (b) Travelling Study Tours under the League of Nations; (c) International Sanitary Convention; (d) Far Eastern Epidemiological Bureau, Singapore; and (e) International Pacific Health Conference. Considerations of space preclude the repetition of this matter in this issue.

§ 6. Medical Inspection of School Children.

1. General.—Medical inspection of school children is carried out more or less thoroughly in all the States. Medical staffs have been organized, and in some States travelling clinics have been established to deal with dental, ocular, and other defects.

2. New South Wales.—A complete system of medical inspection of school children came into operation in this State in 1913. The scheme, as now applied, includes, in country districts, the medical examination of every child at least twice during the compulsory period of school attendance (7–14 years). In the metropolitan area, the scheme provides for the full medical examination of all “entrants” and “leavers”

(1st class in Infants' Departments and children 13 years of age respectively), and the review of all cases found defective between those ages. Parents are notified of the defects found in children, and urged to have them treated. In the metropolitan area, these notices are reinforced by "follow up" work of school nurses, who also arrange hospital and clinic treatment in many cases.

When fully staffed, the staff employed consists of 19 medical officers, 19 dental officers (including 8 part-time), 8 school nurses, 15 dental assistants, and 13 clerical officers. Of the medical staff, three are oculists carrying out refractions and general ocular treatment in schools in country districts; while the dental activities include 11 Travelling Dental Clinics for country work, and a School Dental Clinic (staffed by the equivalent of 3 full-time dental officers and assistants), and a Clinic attached to the Out-Patient Department of the Children's Hospital in the metropolitan area.

Special attention is paid to the supervision of the health of High School pupils, both girls and boys, and these schools in the metropolitan, Newcastle, and Wollongong districts are visited by school medical officers once a year for this purpose.

The same health supervision is maintained by a woman medical officer attached to the Teachers' College. Every student, on entering the college, is medically examined, and any defects found must be remedied before final acceptance. A course of 30 lectures on hygiene is delivered, which every student attends.

The medical and psychological examination of delinquent boys brought before the Children's Court is carried out by a male medical officer, and approximately 1,500 boys are examined and reviewed yearly. The examination of certain girl delinquents is undertaken by a woman medical officer, who also carries out the examination and health supervision of children in residence at the Glenfield Special School for backward children.

One other medical officer is engaged for the greater part of each year in an investigation into hookworm infestation in school children in the North Coast District, working in conjunction with the Federal Health Authority.

From time to time, mass investigations are made into the prevalence and distribution of certain abnormal conditions affecting school children, such as goitre, acute rheumatism, trachoma, feeble-mindedness, crippling, etc.

During 1928, 76,988 children were fully examined, 37,038 (48.11%) were notified for treatment of various defects, including dental. Of these 20.25% were notified for medical defects only. Of those notified for medical and dental defects 18,733 (50.58%) were treated. In addition 24,927 children were "reviewed" (metropolitan system), of whom 9,457 (37.94%) were notified for medical and dental defects, and 4,214 (44.56%) of those notified were treated. Eleven Travelling Dental Clinics working in country districts treated 15,467 children. Dental treatment was also provided at the Metropolitan School Dental Clinic and the Children's Hospital Dental Clinic (Out-patient Department) for 5,747 and 1,038 children respectively.

3. Victoria.—The system adopted provides for the medical examination of each child once every three years during its school life. With the doubling of the medical staff in 1925 the Department concentrated on country work, and medical inspection has been undertaken since that date in country and rural districts, reaching the most remote corners of the State. Medical inspection is now undertaken in all High schools, in practically all country State schools, and in about half of the metropolitan State schools, but in only a few of the registered and institutional schools.

Each school is visited once in every three years, and each child examined. In schools with an attendance of 70 or more, the older boys are examined by a medical man and the older girls by a medical woman. At this inspection every child is first weighed and measured, vision and hearing tested, then undressed to the waist and medically examined as for life assurance, but with a fuller investigation of many hygienic factors, which, at that age, greatly influence the health and growth of the child. Opportunity is also taken to teach the child healthy habits, how to correct faults, and also to get into co-operation for the remedying of defects found.

School nurses employed by the Department are devoted to "follow-up" work *i.e.*, visiting the homes and getting treatment for children found defective by the school medical officers. Owing to the smallness of the staff their work is confined to the metropolitan area. The result of their work is that the treatment received is much greater than that which is obtained without them.

In addition to the medical examination, each child in those schools visited by the school dentist receives dental treatment on entrance to school (if under 8 years of age), and each year thereafter, until it is 12 years of age, when it is left dentally fit.

The present staff is arranged so that 3 dentists and 4 dental attendants are always on duty at the Melbourne Dental Centre, where children from the infant classes in the inner metropolitan schools are brought by the teacher for dental treatment.

A dentist with a dental attendant and equipment travels along the railway line far enough to give one year's work, using practically every town large enough to provide a day's work as a base. The school committees of the outlying schools are notified of the visit, and the parents are invited to bring to the base all children eligible for treatment, *i.e.*, all children under 8 years of age, and all other children treated by the school dentists on previous visits. This method gives all schools in the district the opportunity of dental treatment.

The time of another dentist is fully occupied treating the children in the three largest country centres, Bendigo, Ballarat, and Geelong. In each of these cities a centre with a dentist, dental attendant, and equipment is established for about three months of the year, where children from the infant classes of the neighbouring schools are brought by the teacher or parents.

Three dentists with dental attendants are in charge of three fully-equipped dental vans, each of which has an itinerary which it completes each year. The advantage in the use of a dental motor van is that it is furnished as a dental surgery. It can be driven into the school yard and, immediately on its arrival, work can be commenced without any delay incidental to unpacking equipment, etc., and to the preparation of a room.

In no case is the same dental officer on the same trip for the whole year; work is distributed so that there is a change over at every school vacation—Christmas, May, and September. Those who have been in the country take a period of duty in the city and *vice versa*, while those who have been in the van on one trip will probably travel by train the next time, likewise there is constant change between dentist and dental attendants. By doing this it is felt that monotony is relieved, and that the standard of work is maintained at a higher level by the stimulus of change.

The staff of the medical branch consists of 8 full-time medical officers, 8 dentists, 9 dental assistants, and 2 school nurses.

During the year ended 30th June, 1929, 49,400 children and 1,645 teachers were medically examined, and 28,075 received dental treatment. In addition, 10,756 homes were visited by the school nurses.

4. **Queensland.**—In matters affecting the general administration of the medical branch of the Department of Public Instruction, the Department acts on the advice of its Chief Medical Officer, who, while acting independently in all matters affecting individual schools, is in close touch with the Department of Public Health, and observes the policy of that Department in all matters connected with schools which may have direct bearing upon the health of the State.

Medical inspection of schools and school children is at present carried out by a staff of 4 full-time and 1 part-time medical officers. These officers examine all children for cardiac and pulmonary conditions, and in addition, make a thorough examination of all children referred to them by the school nurses; 20,719 were thus medically examined in 1929, and of these, 3,903 were notified as suffering from some condition requiring correction.

School nurses now numbering 10 have been appointed from time to time. To each nurse is assigned a group of schools, and she is instructed to make a list at each school of those children whom she considers should be seen by the medical inspector at his next visit. She supervises the sanitation, cleanliness and ventilation of the school and notifies the head teacher of all infectious or verminous children or those suffering from impetigo, scabies, etc., who are then excluded. During the year 1929, school nurses examined

33,817 children. In the metropolitan area, the nurses examine the teeth and report all eligible carious cases to the Dental Hospital for treatment. The work of the school nurse is proving more and more valuable in keeping the standard of sanitation high and in controlling the general health of the children.

The Department has in its employ a staff of 12 dentists. These officers are each assigned a district, and such district is not changed for three years unless for reasons which the Chief Medical Officer, on the recommendation of the Chief Dental Inspector, considers advisable. During the year 1929, 35,191 children were examined; 34,618 extractions were performed; and there were 32,442 fillings and 19,832 other treatments. Children and parents alike are beginning to realise the very great value of early dental treatment. The former appreciate the fact that, in the early stages of decay, they are not called upon to suffer pain during dental manipulations, and the latter see in the increased health and vigour of their children the practical value of such treatment.

The Medical Branch, under the direction of the Chief Medical Officer, consists of three sections known respectively as the Medical, Dental and Nursing Sections. These combined constitute the School Medical Service of the State.

In addition to the ordinary activities of the Branch, there has recently been added the Wilson Ophthalmic School Hostel for the treatment and education of severe cases of trachoma. Such cases, on the recommendation of Dr. Johnson, the Departmental Ophthalmologist, are admitted from time to time. Beneficial results have already been obtained. The Institution is situated at Eildon Hill, Windsor, and is fully equipped to treat all types of eye case. The Ophthalmic Surgeon was engaged from London; he is at present organizing the work of some 30 part-time ophthalmic officers in Western Queensland.

Following the policy of the Government to give the same medical and dental facilities to the children of the back country as are obtainable by city dwellers, a Rail Dental Clinic has been constructed. This consists of a carriage 21 feet long, divided into—

- (a) Lavatory and shower accommodation.
- (b) Sleeping and living room, fitted with all conveniences, including ice chest and two-burner Gloria cooking-stove. Ample drawer space is provided in dressing table, and under the sleeping berth.
- (c) Dental surgery fitted with all the latest appliances for dental treatment, including Gloria sterilizer and pressure filtered water. The dental engine is electrically driven and foot controlled. Perfect illumination is obtained by a dental spot light which is part of the chair equipment.
- (d) A compartment for waiting patients which also contains the engine and generator and batteries for lighting the car throughout.

A motor car is carried on a railway waggon at the rear, and can be used at each stopping place to visit the surrounding villages served by the rail centre. This unit will operate in the distant and roadless parts of the State where there would be difficulty in taking the present Road Motor Clinic.

5. South Australia.—Medical inspection embraces the examination of all children attending primary, central, high and technical high schools. Each child is examined once in three years. Reports are furnished to parents of defects likely to interfere with educational progress. The staff consists of 1 principal medical officer, 4 medical inspectors, 1 psychologist, 2 dentists, 3 trained nurses, 2 dental assistants and a disinfecting officer. The dentists attend country schools and treat children. The dentist from the City Clinic was transferred in October, 1928, to the Dental Hospital, where school children are now treated. The medical inspectors meet the parents after the examination of the children, report any defects, and recommend treatment. It has been found that a personal talk is of greater value than a written notice. The psychologist examines mentally retarded children and supervises their work in the opportunity classes which have been established for their benefit.

During the year 1929, 24,773 children were examined by the medical inspectors; of these 590 required notices for defective vision, 167 for defective hearing, and 1,473 for adenoids and tonsils. Two thousand eight hundred and ninety children received dental treatment.

6. **Western Australia.**—Under the Public Health Act 1911–1922, the medical officers of health appointed by the local authorities became medical officers of schools and school children. In the Health Department there are 2 full time and 1 half time medical officers for schools, whose duty is to conduct medical examinations, and three school nurses are employed. During 1929, 12,429 (4,912 country and 7,517 metropolitan) children were examined.

7. **Tasmania.**—To Tasmania belongs the credit of being the first State in Australia to provide for the medical inspection of State school children. As far back as 1906, 1,200 children from the Hobart State schools were examined. At the present time 2 full-time medical officers carry out medical inspections in country and convent schools, while 2 part-time medical officers conduct examinations of school children in Hobart and Launceston. There are also 4 nurses, whose chief duty is to visit the homes to advise the parents as to the treatment of defects disclosed by the medical examination. Country schools are visited by medical officers about once every two years. There are 4 full-time dental officers—two working at dental clinics in Hobart and Launceston, and two visiting the smaller country schools.

8. **Federal Capital Territory.**—By arrangement the education facilities are provided by the Education Department of New South Wales, and the medical inspection of school children is conducted on similar lines to those adopted in that State. This function, however, is now being taken up by the Commonwealth Department of Health. Separate statistical information is not available, the figures for the Territory being included in those shown for New South Wales in 2 *supra*.

§ 7. Supervision and Care of Infant Life.

1. **General.**—The number of infantile deaths and the rate of infantile mortality for the last five years are given in the following table, which shows that during the period 1925 to 1929 no less than 35,450 children died in Australia (including Territories) before reaching their first birthday. With few exceptions, the rate of mortality in the metropolitan area is consistently greater than that for the remainder of the State. Further information regarding infantile mortality will be found in Chapter XXV.—Vital Statistics:—

INFANTILE DEATHS AND DEATH RATES, 1925 TO 1929.

State.	Metropolitan.					Remainder of State.				
	1925.	1926.	1927.	1928.	1929.	1925.	1926.	1927.	1928.	1929.

NUMBER OF INFANTILE DEATHS.

New South Wales	1,282	1,336	1,161	1,045	1,263	1,719	1,724	1,797	1,963	1,710
Victoria	1,155	1,205	1,118	1,016	855	892	764	848	903	732
Queensland ..	318	318	365	298	272	590	683	715	603	579
South Australia ..	237	328	370	292	220	241	181	244	250	216
Western Australia	280	232	210	233	269	183	177	179	186	239
Tasmania ..	101	77	79	81	58	187	156	177	219	197
Australia (b) ..	3,423	3,496	3,303	2,965	2,937	3,821	3,685	3,960	4,124	3,673

RATE OF INFANTILE MORTALITY.(a)

New South Wales	56.74	60.72	56.39	49.41	56.52	53.68	55.41	54.04	58.35	56.39
Victoria	59.81	62.91	62.46	57.14	50.51	53.70	47.14	49.38	54.02	43.89
Queensland ..	49.71	50.41	57.28	48.26	55.83	43.14	50.76	53.12	44.31	42.53
South Australia ..	48.95	53.03	64.00	49.09	43.50	43.08	34.16	42.72	45.79	38.53
Western Australia	65.71	53.85	57.30	60.74	64.00	49.64	44.33	37.16	38.21	49.30
Tasmania ..	67.83	53.73	55.71	80.92	55.56	50.15	43.88	51.83	59.35	52.49
Australia (b) ..	57.13	58.86	59.27	53.05	53.12	50.43	50.05	50.88	52.88	49.65

(a) Number of deaths under one year per 1,000 births registered.

(b) Exclusive of Territories.

During recent years greater attention has been paid to the fact that the health of the community depends largely on pre-natal as well as after care in the case of mothers and children. Government and private organizations are, therefore, taking steps to provide instruction and treatment for mothers before and after confinement, while the health and well-being of mother and child are looked after by the institution of baby health-centres, baby clinics, crèches, visitation by qualified midwifery nurses, supervision of milk supply, etc.

2. Government Activities.—In all the States Acts have been passed with the object of supervising and ameliorating the conditions of infant life and reducing the rate of mortality. Government Departments control the boarding-out to suitable persons of the wards of the State, and wherever possible the child is boarded-out to its mother or near female relative. Stringent conditions regulate the adoption, nursing and maintenance of children placed in foster-homes by private persons, while special attention is devoted to the welfare of ex-nuptial children. (See also in this connexion Chapter XI.—Public Benevolence.) Under the provisions of the Maternity Allowance Act 1912, a sum of five pounds is payable to the mother in respect of each confinement at which a living or viable child is born. Further particulars regarding Maternity Allowance are given in Chapter VIII.—Finance.

3. Nursing Activities.—(i) *General.* In several of the States, the Government maintains institutions which provide treatment for mothers and children, while, in addition, subsidies are granted to various associations engaged in welfare work.

(ii) *Details by States.* In previous issues of the Year Book (see No. 22, pp. 515 and 516) information, with certain statistical data, concerning the activities of institutions in each State has been included, but cannot be published in this issue.

(iii) *Summary.* The following table gives particulars of the activities of the Baby Health Centres and the Bush Nursing Associations :—

BABY HEALTH CENTRES AND BUSH NURSING ASSOCIATIONS, 1929.

Heading.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
Baby Health Centres:—							
Metropolitan No.	39	58	5	39	(b)16	4	161
Urban-Provincial, and Rural No.	37	35	10	5	..	3	90
Total No.	76	93	15	44	16	7	251
Attendances at Centres .. No.	373,697	225,707	108,794	56,307	37,606	20,201	822,312
Visits paid by Nurses .. No.	105,732	56,646	14,216	36,235	10,177	10,672	233,678
Bush Nursing Association, Number of Centres ..	44	62	10	(a)31	1	17	165

(a) District Trained Nursing Society.

(b) Includes Urban-Provincial and Rural.

NOTE.—Particulars for the Federal Capital Territory are not available.

CHAPTER XIII.—LABOUR, WAGES, AND PRICES.

A.—PRICES.

§ 1. Wholesale Prices.

1. **General.**—The results of an investigation into wholesale prices in Melbourne from 1871 to the end of September, 1912, were given in some detail in Report No. 1 of the Labour and Industrial Branch, while summarized results for later years are included in subsequent Reports.

The index-numbers up to the year 1911 are based on the prices of eighty commodities, but since that year the number has been increased to ninety-two.* The methods followed for the computation of the wholesale price index-numbers are similar to those adopted in regard to retail prices. The commodities included, the units of measurement for which the prices are taken, and the mass-units indicating the relative extent to which each commodity is used or consumed, are shown in a tabular statement in Labour Report No. 20 for 1929 (page 11).

2. **Index-Numbers.**—Index-numbers have been computed for each group of commodities, as well as for all groups together. The index-numbers for the several groups, and for all groups together, are shown in the following table, and in each case were computed with the prices in the year 1911 as base. They show, for each of the years specified, the expenditure necessary—if distributed in purchasing the relative quantities (indicated by the mass-units) of the several commodities concerned—to purchase what would have cost £1,000 in 1911.

INDEX-NUMBERS.—WHOLESALE PRICES, MELBOURNE, 1861 TO 1929.

(Base 1911 = 1,000).

Year.	I. Metals and Coal.	II. Jute, Leather, Wool, etc.	III. Agricultural Produce, etc.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Mate- rials.	VIII. Chem- icals.	All Com- modities together.
1861	1,438	1,381	1,588	1,008	1,063	..	1,070	2,030	1,538
1871	1,096	1,257	1,236	864	1,586	..	1,044	1,409	1,229
1881	1,178	1,115	1,012	935	1,421	..	1,091	1,587	1,121
1891	895	847	1,024	995	1,032	888	780	1,194	945
1901	1,061	774	923	1,029	1,048	1,345	841	917	974
1902	1,007	756	1,193	1,215	945	1,447	837	881	1,051
1903	923	834	1,209	1,059	936	1,443	875	921	1,049
1904	821	885	754	876	916	1,427	845	875	890
1905	772	850	894	980	942	1,209	801	859	910
1906	882	978	916	972	923	1,110	896	864	948
1907	1,037	1,017	973	1,020	948	1,294	968	961	1,021
1908	1,033	901	1,312	1,198	968	1,335	935	891	1,115
1909	1,014	907	1,000	1,119	978	1,088	911	815	993
1910	1,004	1,052	969	1,100	999	1,008	906	898	1,003
1911	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1912	1,021	991	1,370	1,206	1,052	1,357	1,057	978	1,172
1913	1,046	1,070	1,097	1,054	1,024	1,252	1,128	995	1,086
1914	1,099	1,032	1,207	1,137	1,021	1,507	1,081	1,253	1,149
1915	1,284	1,017	2,162	1,530	1,133	2,435	1,275	1,528	1,604
1916	1,695	1,423	1,208	1,485	1,322	2,515	1,491	1,760	1,504
1917	2,129	2,008	1,157	1,423	1,343	2,403	1,884	2,171	1,662
1918	2,416	2,360	1,444	1,454	1,422	2,385	2,686	3,225	1,934
1919	2,125	2,363	1,985	1,651	1,516	2,348	2,851	2,898	1,855
1920	2,298	2,624	2,439	2,209	1,918	3,279	3,226	2,825	2,480
1921	2,173	1,362	1,767	2,000	1,976	2,158	2,733	2,303	1,903
1922	1,942	1,681	1,628	1,648	1,869	1,787	2,005	1,965	1,758
1923	1,826	2,148	1,778	1,837	1,746	2,579	2,025	1,933	1,944
1924	1,835	2,418	1,647	1,655	1,721	2,223	1,715	1,806	1,885
1925	1,852	1,967	1,797	1,636	1,723	2,212	1,711	1,790	1,844
1926	1,938	1,582	2,001	1,784	1,731	1,931	1,665	1,816	1,832
1927	1,962	1,650	1,826	1,823	1,724	2,111	1,624	1,866	1,817
1928	1,912	1,781	1,726	1,751	1,707	2,015	1,744	1,923	1,792
1929	1,912	1,556	1,792	1,853	1,690	2,246	1,754	1,942	1,803

NOTE.—The figures given in this table are comparable in the vertical columns, but are not directly comparable horizontally. The index-numbers are reversible.

* In the computation of the index-numbers for years prior to 1911, the aggregate expenditure on 80 commodities in 1911 is taken as base (= 1,000), while for later years the aggregate expenditure on 92 commodities is taken.

3. **Fluctuations, July, 1914, to July, 1930.**—Since the outbreak of war, prices of many commodities have increased considerably. This is shown in the following table, in which the index-numbers are given for each group for the months of July, 1923, to July, 1930, taking July, 1914, the last month before the outbreak of war, as base (= 1,000) for each group :—

INDEX-NUMBERS.—WHOLESALE PRICES, MELBOURNE, JULY, 1914, TO JULY, 1930.

Particulars.	I. Metals and Coal.	II. Jute, Leather, Wool, etc.	III. Agri- cultural Produce, etc.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Mate- rials.	VIII. Chem- icals.	All Groups.
July, 1914 ..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
" 1923 ..	1,658	1,876	1,691	1,668	1,698	2,229	1,780	1,923	1,799
" 1924 ..	1,666	2,119	1,525	1,431	1,677	1,281	1,666	1,743	1,626
" 1925 ..	1,663	1,744	1,643	1,404	1,667	1,492	1,605	1,716	1,618
" 1926 ..	1,741	1,456	1,860	1,514	1,686	1,243	1,557	1,798	1,615
" 1927 ..	1,789	1,503	1,674	1,606	1,677	1,390	1,518	1,826	1,607
" 1928 ..	1,738	1,656	1,618	1,477	1,654	1,217	1,593	1,862	1,573
" 1929 ..	1,741	1,381	1,755	1,559	1,634	1,346	1,598	1,894	1,590
" 1930 ..	1,669	1,031	1,468	1,415	1,625	1,367	1,722	1,920	1,441

§ 2. Retail Prices and House Rents.

1. **Introduction.**—(i) *General.* In Labour Report No. 1, issued in December, 1912, the results of certain investigations into the subjects of Prices, Price-Indexes and Cost of Living in past years were published, and some account was given of the methods employed for the collection of the data and of the technique adopted in the computation of the results. A detailed examination of the theory upon which the calculation of the index-numbers is based was given, but being necessarily too technical for inclusion in the general chapter, was relegated to Appendixes. The results of further investigations are included in the annual Labour Reports and Quarterly Summaries of Australian Statistics issued by this Bureau.

(ii) *Computation of Index-Numbers.* Numerical examples of the technique and methods adopted for the computation of index-numbers were given in Report No. 2 (pp. 44 and 45), and in Report No. 9 Appendixes I. to IV., pp. 174 to 229.

2. **Scope of Investigation.**—As noted in Report No. 1, distinction must be drawn between (a) Variations in the *purchasing-power* of money, and (b) Variations in the *standard of living*, and in Report No. 2 attention was directed to the factors which must be taken into consideration in dealing with these matters in order to arrive at a satisfactory aggregate expenditure. The various Reports deal with the list of the commodities selected and the reasons for their adoption, while § 4 of this Chapter deals with the extension of the inquiry to cover all ordinary household expenditure.

3. **Variations in Index-Numbers for Retail Prices and House Rents, Capital Cities, 1907 to 1929.**—(i) *General.* In Labour Reports and Bulletins, and in recent issues of the Quarterly Summaries of Statistics, index-numbers were given for each of the four groups and for all groups combined for each capital city since 1901, the expenditure in 1911 being taken in each case as base (= 1,000). In this sub-section summarized results only are given, firstly, for food and groceries; secondly, for house rent; and thirdly, for the groups combined—the weighted average expenditure for all capital cities in 1911 being taken in each case as base (= 1,000). The index-numbers in each table are fully comparable with one another, since they show not only the variations from year to year in each capital, but also the relative cost as between the cities.

(ii) *Food and Groceries.* The index-numbers thus computed for the three groups comprising groceries and food are shown in the following table for 1907, 1911, 1914, 1921, and for the last five years:—

RETAIL PRICE INDEX-NUMBERS, FOOD AND GROCERIES.—CAPITAL CITIES,
1907 TO 1929.

City.	1907.	1911.	1914.	1921.	1925.	1926.	1927.	1928.	1929.
Sydney	936	989	1,156	1,898	1,785	1,867	1,846	1,826	1,948
Melbourne	925	935	1,091	1,901	1,748	1,774	1,732	1,684	1,795
Brisbane	947	1,018	1,078	1,812	1,734	1,788	1,680	1,671	1,701
Adelaide	951	1,020	1,215	1,906	1,840	1,869	1,841	1,775	1,887
Perth	1,197	1,346	1,302	1,995	1,938	1,866	1,796	1,882	1,938
Hobart	1,010	1,058	1,212	2,025	1,810	1,868	1,788	1,727	1,833
Weighted Average (a) ..	955	1,000	1,144	1,902	1,785	1,829	1,789	1,761	1,866

(a) For all capital cities.

The figures quoted are directly comparable in every respect; thus, the same quantity of food and groceries, which cost £1,000 in the capital cities considered as a whole in 1911, would have cost £1,156 in Sydney in 1914, £1,346 in Perth in 1911, or £1,795 in Melbourne in 1929.

In 1929 increases were experienced in all the capitals. Comparing the results for 1929 with those for 1911, the extent by which prices increased varied from 97 per cent. in Sydney to 44 per cent. in Perth. Prices, however, were abnormally high in Perth in 1911. The average retail prices in the six capitals considered as a whole in 1929, compared with prices in 1911, were 86.6 per cent. higher.

(iii) *Housing.* In issues of the Official Year Book prior to No. 19, the computations of index-numbers of housing accommodation were based upon the rentals of all houses from under 4 rooms to 7 rooms and over. In the following tables that basis has been altered, to accord with a resolution adopted by the Conference of Statisticians of Australia and New Zealand to the following effect: "that for purposes of computing price levels in respect of rent, it is desirable that houses of four and five rooms only be taken into account." This alteration will account for the difference between index-numbers given in the following tables and those given for the same tables in issues of the Official Year Book prior to the year 1926.

The following table gives index-numbers computed for the weighted average house rent of 4 and 5 roomed houses in each of the capital cities from 1907 to 1929, taking the average rent for the six capitals in 1911 as the base (= 1,000). The average rent has been obtained for each city separately by multiplying the weighted average rent for each class of house (i.e., wooden houses of 4 rooms and of 5 rooms and brick houses of 4 rooms and of 5 rooms) by a number ("weight") representing the relative number of houses of that class in the particular city. The sum of the products thus obtained divided by the sum of the weights, gives the weighted average for 4 and 5 roomed houses combined. The number of houses in each class for each city was obtained from the results of the 1921 Census, and the index-numbers are based on the weighted average rents for 4 and 5 roomed houses combined, and do not refer to any particular class of house. The weighted average rents for each class are given in appendixes to Labour Reports, and an examination of these figures shows that for some classes of houses the increase has been greater, and in some less, than the general increase indicated in the following table.

INDEX-NUMBERS.—HOUSING, CAPITAL CITIES, 1907 TO 1929.

City.	1907.	1911.	1914.	1921.	1925.	1926.	1927.	1928.	1929.
Sydney	969	1,145	1,243	1,617	1,870	1,826	1,814	1,868	1,900
Melbourne	744	931	1,027	1,340	1,604	1,695	1,710	1,778	1,789
Brisbane	463	610	762	1,030	1,185	1,333	1,361	1,372	1,375
Adelaide	835	1,155	1,071	1,322	1,576	1,516	1,540	1,672	1,611
Perth	749	857	963	1,209	1,340	1,469	1,507	1,539	1,561
Hobart	661	739	847	1,441	1,649	1,628	1,579	1,535	1,524
Weighted Average (a)	813	1,000	1,082	1,410	1,647	1,677	1,684	1,743	1,754

(a) For all capital cities.

NOTE.—The above figures are directly comparable in every respect.

(iv) *Food, Groceries, and Housing (4 and 5 roomed Houses) combined.* The weighted averages for all groups are of importance, as indicating the general results of this investigation so far as the purchasing-power of money is concerned. The following table shows the index-numbers for groceries, food, and house rent (4 and 5 roomed houses) for each capital city, the weighted average cost for the six capitals in 1911 being taken as base (= 1,000) :—

RETAIL PRICE INDEX-NUMBERS(a)—FOOD, GROCERIES, AND HOUSING.—
CAPITAL CITIES, 1907 TO 1929.

City.	1907.	1911.	1914.	1921.	1925.	1926.	1927.	1928.	1929.
Sydney	948	1,048	1,188	1,793	1,817	1,852	1,834	1,842	1,930
Melbourne	857	934	1,067	1,690	1,694	1,744	1,724	1,719	1,793
Brisbane	765	865	959	1,519	1,521	1,617	1,560	1,559	1,579
Adelaide	908	1,070	1,161	1,687	1,741	1,736	1,728	1,736	1,788
Perth	1,029	1,162	1,175	1,700	1,714	1,717	1,687	1,753	1,796
Hobart	879	938	1,075	1,806	1,750	1,778	1,710	1,655	1,717
Weighted Average (b)	900	1,000	1,121	1,717	1,733	1,772	1,749	1,755	1,824

(a) As the price index-number increases, the purchasing-power of money diminishes.

(b) For all capital cities.

NOTE.—The above figures are directly comparable in every respect.

The combination of housing with prices of food and groceries has had the effect of considerably modifying the index of prices, or, in other words, the purchasing-power of money, as compared with the similar index based on food and groceries only. In 1921 prices of food and groceries and housing increased considerably, the combined results for the six capital cities for 1921 being an increase of 53.2 per cent. over 1914, and 71.7 per cent. over 1911. The increase in the index-number between 1914 and 1921 varied between the capital cities from 45 per cent. in Perth to 68 per cent. in Hobart, while between 1911 and 1921 it varied between 46 per cent. in Perth and 93 per cent. in Hobart. In 1923 there was an increase in the combined cost of food, groceries, and housing in all the cities, the weighted average index-number being 1,710 as compared with 1,610 in 1922. The index-number for 1924 shows a decline of 1.3 per cent. on that for 1923, that for 1925 shows an increase of 2.6 per cent. from 1924, food and groceries having increased 3 per cent., and housing increased 2 per cent., while that for 1926 discloses a rise of 2.3 per cent. over 1925, both food and groceries and housing again showing increases. The index-numbers for 1927 disclose a decrease on 1926 prices of 1.3 per cent., the drop in prices of food and groceries of 2.2 per cent. more than outweighing the slight increase in rents. The combined index-number for 1928 shows an increase of 0.3 per cent. on 1927. Food and groceries declined 1.5 per cent., but housing increased by 3.5 per cent. During 1929 prices of food increased nearly 6 per cent. over those ruling in 1928; rents, however, only increased 0.6 per cent. The combined index-number for 1929 was 3.9 per cent. higher than that for the year 1928.

4. *Retail Price Index-Numbers in Terms of Currency.*—The tables in sub-section 3 give the relative cost in the six capital cities of food, groceries, and housing from 1907 to 1929 in the form of index-numbers. The figures have been converted into a

monetary basis in the next table, and show the sums which would have to be paid in each city and in each year in order to purchase such relative quantities (indicated by the mass units) of the several commodities, and to pay such sums for housing as would in the aggregate cost £1, according to the weighted average prices and rents in the six capitals in 1911.

RETAIL PRICES.—AMOUNTS NECESSARY ON THE AVERAGE IN EACH YEAR FROM 1907 TO 1929 TO PURCHASE IN EACH CAPITAL CITY WHAT WOULD COST ON THE AVERAGE £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Cities.
FOOD AND GROCERIES (46 COMMODITIES).							
1907	18 9	18 6	18 11	19 0	23 11	20 2	19 1
1911	19 9	18 8	20 4	20 5	26 11	21 2	20 0
1914	23 1	21 10	21 7	24 4	26 0	24 3	22 11
1920	43 0	41 1	41 1	42 8	41 0	43 3	42 0
1925	35 8	35 0	34 8	36 10	38 9	36 2	35 8
1926	37 4	35 6	35 9	37 5	37 4	37 4	36 7
1927	36 11	34 8	33 7	36 10	35 11	35 9	35 9
1928	36 6	33 8	33 5	35 6	37 8	34 6	35 3
1929	39 0	35 11	34 0	37 9	38 9	36 8	37 4
1929 { 1st Quarter	39 1	35 6	34 7	36 11	39 1	36 9	37 2
1929 { 2nd " "	38 8	36 0	33 10	37 10	39 11	36 6	37 4
1929 { 3rd " "	38 10	36 0	33 8	38 5	38 9	36 6	37 4
1929 { 4th " "	39 4	36 2	34 0	37 10	37 4	37 0	37 6

HOUSING ACCOMMODATION (WEIGHTED AVERAGE—4 AND 5 ROOMED HOUSES).

1907	19 5	14 11	9 3	16 8	15 0	13 3	16 3
1911	22 11	18 7	12 2	23 1	17 2	14 9	20 0
1914	24 10	20 6	15 3	21 5	19 3	16 11	20 8
1920	30 10	25 5	20 4	24 10	22 11	28 5	26 11
1925	37 5	32 1	23 4	31 6	26 10	33 0	32 11
1926	36 6	33 11	26 8	30 4	29 5	32 7	33 7
1927	36 3	34 2	27 3	30 10	30 2	31 7	33 8
1928	37 4	35 7	27 5	33 5	30 9	30 8	34 10
1929	38 0	35 9	27 6	32 3	31 3	30 6	35 1
1929 { 1st Quarter	37 10	35 10	27 7	33 6	31 0	30 7	35 2
1929 { 2nd " "	37 11	35 9	27 8	32 7	30 10	30 6	35 1
1929 { 3rd " "	38 1	35 10	27 5	31 7	31 4	30 6	35 1
1929 { 4th " "	38 1	35 9	27 5	31 8	31 8	30 5	35 0

FOOD, GROCERIES, AND HOUSING (4 AND 5 ROOMS ONLY) COMBINED.

1907	19 0	17 2	15 4	18 2	20 7	17 7	18 0
1911	21 0	18 8	17 4	21 5	23 3	18 9	20 0
1914	23 9	21 4	19 2	23 3	23 6	21 6	22 5
1920	38 5	35 3	33 3	35 11	34 2	37 8	36 4
1925	36 4	33 11	30 5	34 10	34 3	35 0	34 8
1926	37 1	34 11	32 4	34 9	34 4	35 7	35 5
1927	36 8	34 6	31 2	34 7	33 9	34 2	35 0
1928	36 10	34 5	31 2	34 9	35 1	33 1	35 1
1929	38 7	35 10	31 7	35 8	35 11	34 4	36 6
1929 { 1st Quarter	38 7	35 7	32 0	35 7	36 0	34 5	36 5
1929 { 2nd " "	38 5	35 11	31 6	35 10	36 6	34 3	36 6
1929 { 3rd " "	38 7	35 11	31 4	35 10	36 0	34 3	36 6
1929 { 4th " "	38 10	36 0	31 6	35 4	35 3	34 6	36 6

5. Variations in Index-Numbers, Retail Prices and Housing, Thirty Australian Towns, 1927 to 1929.—The index-numbers given in the preceding sub-sections show changes in the cost of food, groceries, and housing separately for each capital city during the years 1907 to 1929. The figures given in the next table show the relative cost of food and groceries, and of housing for the years 1927 to 1929 in the thirty towns for which particulars are now collected. The weighted aggregate expenditure for the six capitals for the year 1911 has been taken as base and made equal to 1,000, hence the columns are comparable both horizontally and vertically. The index-numbers in the last column are the same as in previous tables where the period and town are comparable.

INDEX-NUMBERS, THIRTY TOWNS, SHOWING RELATIVE EXPENDITURE ON FOOD AND GROCERIES AND ON HOUSING (4 AND 5 ROOMS) SEPARATELY, AND ON THESE ITEMS COMBINED. BASIS OF TABLE = WEIGHTED AVERAGE EXPENDITURE ON FOOD, GROCERIES, AND HOUSING (4 AND 5 ROOMS) IN THE SIX CAPITAL CITIES IN 1911 = 1,000.

Town.	1927.			1928.			1929.		
	Food and Groceries.	Housing, 4 and 5-roomed Houses.	Food, Groceries, and Housing.	Food and Groceries.	Housing, 4 and 5-roomed Houses.	Food, Groceries, and Housing.	Food and Groceries.	Housing, 4 and 5-roomed Houses.	Food, Groceries, and Housing.
NEW SOUTH WALES—									
Sydney	1,153	681	1,834	1,140	702	1,842	1,217	713	1,930
Newcastle	1,144	652	1,796	1,136	669	1,805	1,185	664	1,849
Broken Hill	1,345	425	1,770	1,346	431	1,777	1,436	430	1,866
Goulburn	1,150	698	1,848	1,155	727	1,882	1,221	762	1,983
Bathurst	1,112	532	1,644	1,104	544	1,648	1,168	540	1,708
Weighted Average ..	1,157	671	1,828	1,145	691	1,836	1,219	701	1,920
VICTORIA—									
Melbourne	1,082	642	1,724	1,051	668	1,719	1,121	672	1,793
Ballarat	1,105	387	1,492	1,078	414	1,492	1,149	432	1,581
Bendigo	1,106	483	1,589	1,078	487	1,565	1,163	501	1,664
Geelong	1,078	612	1,690	1,064	601	1,665	1,127	578	1,705
Warrnambool	1,060	486	1,546	1,037	510	1,547	1,106	521	1,627
Weighted Average ..	1,083	623	1,706	1,054	647	1,701	1,124	651	1,775
QUEENSLAND—									
Brisbane	1,049	511	1,560	1,044	515	1,559	1,063	516	1,579
Toowoomba	1,018	457	1,475	995	446	1,441	1,037	442	1,479
Rockhampton	1,122	428	1,550	1,083	401	1,484	1,128	389	1,517
Charters Towers	1,271	346	1,617	1,214	415	1,629	1,231	457	1,688
Warwick	1,082	458	1,540	1,039	416	1,455	1,085	416	1,501
Weighted Average ..	1,062	492	1,554	1,049	494	1,543	1,073	495	1,568
SOUTH AUSTRALIA—									
Adelaide	1,150	578	1,728	1,109	627	1,736	1,178	605	1,783
Kadina, &c.	1,196	312	1,508	1,183	295	1,478	1,269	272	1,541
Port Pirie	1,196	431	1,627	1,171	429	1,600	1,240	427	1,667
Mount Gambier	1,133	314	1,447	1,114	337	1,451	1,154	345	1,499
Peterborough	1,231	491	1,722	1,240	473	1,713	1,302	500	1,802
Weighted Average ..	1,154	557	1,711	1,115	601	1,716	1,185	580	1,765
WESTERN AUSTRALIA—									
Perth, &c.	1,122	565	1,687	1,175	578	1,753	1,209	587	1,796
Kalgoorlie, &c.	1,232	332	1,614	1,309	333	1,642	1,414	334	1,748
Northam	1,226	549	1,775	1,233	563	1,796	1,291	563	1,854
Bunbury	1,238	437	1,675	1,262	412	1,674	1,310	414	1,724
Geraldton	1,229	534	1,763	1,224	587	1,811	1,282	605	1,887
Weighted Average ..	1,145	538	1,683	1,194	548	1,742	1,287	556	1,793
TASMANIA—									
Hobart	1,117	593	1,710	1,078	577	1,655	1,145	572	1,717
Launceston	1,102	483	1,585	1,059	519	1,578	1,111	510	1,621
Burnie	1,135	473	1,608	1,124	478	1,602	1,203	480	1,683
Devonport	1,123	457	1,580	1,086	437	1,523	1,159	450	1,609
Queenstown	1,234	261	1,495	1,206	282	1,488	1,273	319	1,592
Weighted Average ..	1,118	539	1,657	1,080	539	1,619	1,143	536	1,679
Weighted Average for 30 Towns	1,121	613	1,734	1,105	633	1,738	1,169	637	1,806
Weighted Average 6 Capital Cities	1,117	632	1,749	1,100	655	1,755	1,165	659	1,824

§ 3. Retail Price Index-Numbers, 200 Towns.

1. General.—To supplement the information collected each month for the 30 towns specified in the preceding paragraph, a special investigation was initiated in November, 1913, into retail price index-numbers in 70 additional towns. This investigation was repeated in November, 1914, and again in November, 1915, when the number of additional towns was increased to 120. In November, 1923, the number of additional

towns was further increased to 170, and it is intended to institute inquiries in November in each year, thus making information available annually for 200 towns. The results of the first investigation were published in Labour Bulletin No. 5 (Section IV., pages 26 to 33), where a description was given of the methods adopted in making the investigation and in computing the index-numbers. The results of the succeeding yearly investigations have appeared in the Labour Bulletins and Reports of this Bureau.

2. Detailed Results, 1927 to 1929.—The results of the investigations made in November, 1927 to 1929, are set out in the following tables. The aggregate expenditure on food and groceries separately is shown in the form of index-numbers for each year in column A. In columns B and C the corresponding aggregate expenditure on food, groceries, and rent of 4 rooms, and food, groceries, and rent of 5 rooms are shown for each year for each individual town. The index-number 1,773 represents the weighted average expenditure in 200 towns on food, groceries, and rent of 5-roomed houses, and 1,634 represents the weighted average expenditure on food, groceries, and rent of 4-roomed houses in November, 1929. Similarly, in column A, the index-number 1,133 represents the relative weighted average expenditure on food and groceries only in November, 1929. The figures given in the table are comparable throughout. Thus, taking the weighted average expenditure for all 200 towns on food, groceries, and rent of 5-roomed houses as equal to 1,773, the expenditure on the same items in Melbourne is 1,795, while if 4-roomed houses were substituted for 5-roomed the expenditure in Melbourne would be represented by 1,647.

In the tables on the following pages the basis taken is the weighted average expenditure on food, groceries, and housing accommodation in the six capital cities in 1911, made equal to 1,000.

INDEX-NUMBERS.—COST OF FOOD, GROCERIES, AND HOUSING IN 200 TOWNS IN 1927, 1928, AND 1929, COMPARED WITH THE WEIGHTED AVERAGE COST OF FOOD, GROCERIES, AND RENT FOR ALL HOUSES IN THE SIX CAPITAL CITIES IN 1911 AS BASE (= 1,000).

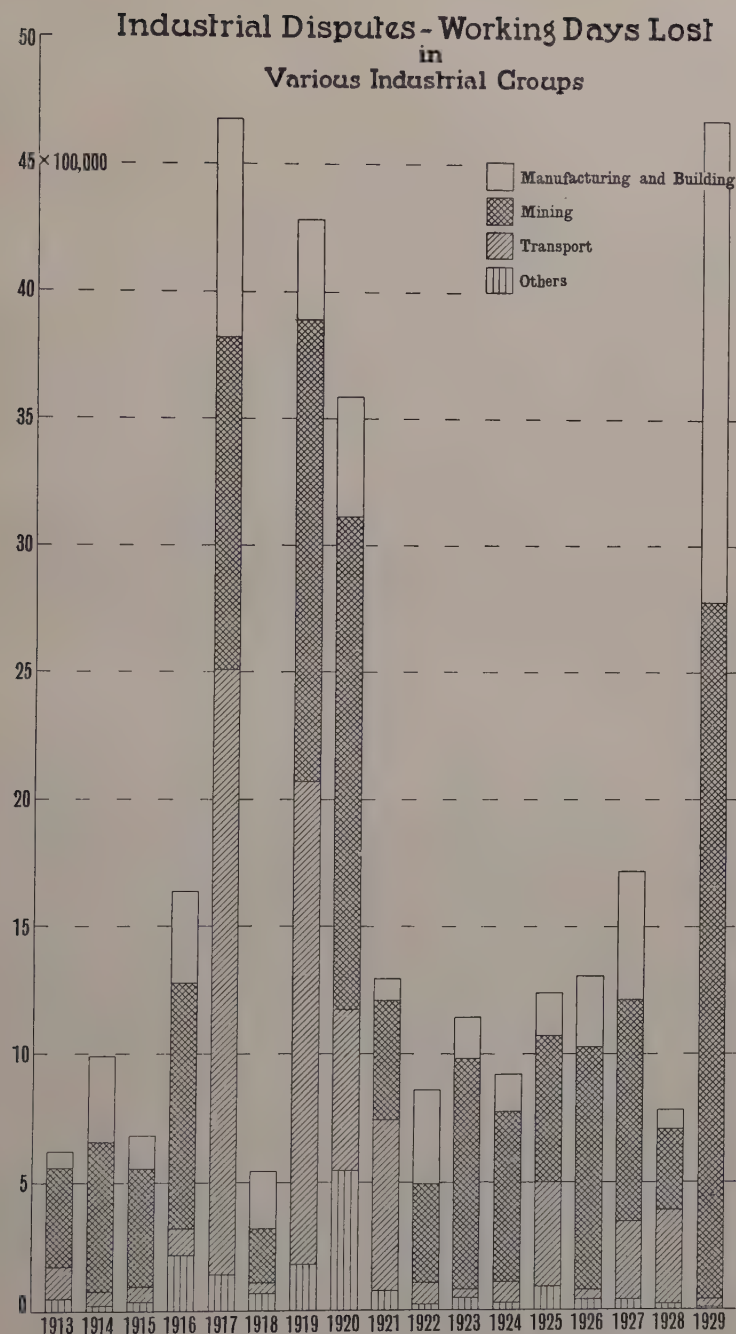
State and Town.	1927. November.			1928. November.			1929. November.		
	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.
	A	B	C	A	B	C	A	B	C
NEW SOUTH WALES—									
Sydney	1,129	1,673	1,790	1,072	1,620	1,776	1,186	1,751	1,897
Newcastle	1,103	1,637	1,793	1,058	1,542	1,767	1,159	1,649	1,852
Broken Hill	1,300	1,663	1,775	1,239	1,606	1,724	1,406	1,772	1,802
Goulburn	1,111	1,650	1,827	1,082	1,646	1,778	1,200	1,801	1,939
Bathurst	1,057	1,440	1,516	1,019	1,401	1,505	1,140	1,519	1,616
Albury	1,087	1,504	1,975	1,063	1,754	1,914	1,161	1,822	1,962
Armidale	1,058	1,522	1,624	1,031	1,513	1,590	1,127	1,603	1,701
Ballina	1,118	1,604	1,699	1,113	1,607	1,733	1,191	1,684	1,809
Bega	1,122	1,461	1,536	1,097	1,419	1,530	1,181	1,506	1,622
Berry	1,182	1,537	1,656	1,090	1,445	1,550	1,175	1,504	1,635
Blackheath	1,232	1,657	1,795	1,230	1,675	1,800	1,272	1,733	1,812
Bourke	1,289	1,533	1,599	1,287	1,550	1,613	1,374	1,611	1,684
Bowral	1,119	1,765	1,831	1,090	1,723	1,814	1,219	1,794	1,956
Casino	1,106	1,550	1,759	1,086	1,532	1,771	1,164	1,690	1,836
Cessnock	1,109	1,652	1,718	1,075	1,568	1,634	1,164	1,503	1,576
Cobar	1,329	1,438	1,487	1,231	1,363	1,428	1,312	1,510	1,549
Cooma	1,233	1,542	1,741	1,133	1,463	1,672	1,256	1,599	1,816
Coonamble	1,214	1,558	1,682	1,121	1,485	1,611	1,250	1,614	1,753
Coofamundra	1,130	1,624	1,821	1,049	1,548	1,782	1,166	1,712	1,866
Corralim	1,106	1,455	1,567	1,096	1,539	1,671	1,159	1,613	1,751
Cowra	1,106	1,633	1,657	1,081	1,610	1,687	1,189	1,680	1,817
Cronulla	1,144	1,675	1,844	1,128	1,644	1,817	1,275	1,827	1,998
Deniliquin	1,080	1,471	1,583	1,098	1,480	1,625	1,208	1,583	1,734
Dubbo	1,158	1,709	1,791	1,139	1,760	1,834	1,196	1,854	1,941
Forbes	1,123	1,684	1,822	1,055	1,601	1,800	1,196	1,781	1,990

INDEX-NUMBERS.—COST OF FOOD, GROCERIES, AND HOUSING IN 200 TOWNS, ETC.—*continued.*

State and Town.	1927. November.			1928. November.			1929. November.		
	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.
NEW SOUTH WALES— <i>continued.</i>	A	B	C	A	B	C	A	B	C
Gilgandra	1,203	1,532	1,611	1,184	1,477	1,546	1,268	1,643	1,692
Glen Innes	1,029	1,431	1,569	1,007	1,414	1,575	1,112	1,546	1,697
Grafton	1,060	1,561	1,718	993	1,467	1,649	1,060	1,546	1,705
Grenfell	1,076	1,499	1,668	1,065	1,473	1,674	1,173	1,568	1,766
Griffith	1,254	2,175	2,406	1,161	2,083	2,313	1,293	2,214	2,444
Gulgong	1,162	1,432	1,527	1,121	1,417	1,490	1,207	1,512	1,622
Gunnedah	1,127	1,512	1,658	1,046	1,445	1,593	1,131	1,567	1,684
Hay	1,136	1,514	1,704	1,164	1,545	1,765	1,273	1,677	1,871
Inverell	1,122	1,561	1,639	1,108	1,569	1,645	1,155	1,632	1,737
Junee	1,123	1,781	1,787	1,095	1,770	1,806	1,205	1,869	1,896
Katoomba	1,159	1,797	1,938	1,160	1,752	1,904	1,250	1,848	1,930
Kempsey	1,106	1,599	1,691	1,068	1,539	1,639	1,037	1,517	1,607
Kiama	1,145	1,507	1,606	1,152	1,514	1,614	1,211	1,612	1,724
Kurri Kurri	1,150	1,619	1,673	1,108	1,497	1,588	1,163	1,510	1,603
Leeton	1,216	1,890	1,972	1,190	1,908	1,980	1,284	2,003	2,060
Lismore	1,101	1,561	1,703	1,085	1,604	1,766	1,111	1,676	1,837
Lithgow	1,093	1,543	1,627	1,094	1,531	1,610	1,196	1,643	1,716
Maitland	1,090	1,567	1,690	1,026	1,450	1,567	1,142	1,504	1,609
Moree	1,155	1,666	1,917	1,140	1,617	1,872	1,243	1,712	1,973
Moss Vale	1,126	1,701	1,797	1,086	1,652	1,751	1,191	1,787	1,868
Mudgee	1,143	1,582	1,680	1,108	1,626	1,720	1,196	1,701	1,802
Narrabri	1,163	1,557	1,712	1,089	1,519	1,666	1,205	1,658	1,799
Narrandera	1,123	1,627	1,855	1,122	1,677	1,908	1,205	1,730	1,961
Nowra	1,180	1,628	1,703	1,135	1,586	1,661	1,198	1,659	1,761
Orange	1,082	1,619	1,746	1,067	1,643	1,771	1,147	1,700	1,873
Parkes	1,132	1,685	1,855	1,077	1,630	1,758	1,213	1,761	1,912
Penrith	1,069	1,509	1,634	1,098	1,545	1,624	1,145	1,592	1,698
Port Kembla	1,166	1,655	1,764	1,137	1,699	1,821	1,216	1,777	1,920
Portland	1,151	1,602	1,714	1,112	1,550	1,658	1,234	1,641	1,763
Queanbeyan	1,169	1,827	1,956	1,141	1,600	1,700	1,235	1,690	1,781
Quirindi	1,103	1,458	1,649	1,075	1,420	1,599	1,169	1,493	1,636
Richmond	1,116	1,521	1,669	1,034	1,478	1,626	1,140	1,535	1,732
Scone	1,064	1,497	1,574	1,050	1,488	1,636	1,077	1,537	1,675
Singleton	1,177	1,539	1,621	1,096	1,508	1,611	1,148	1,543	1,684
Tamworth	1,053	1,464	1,633	1,006	1,430	1,614	1,109	1,537	1,725
Taree	1,134	1,610	1,827	1,103	1,621	1,772	1,149	1,682	1,833
Temora	1,136	1,712	1,843	1,120	1,664	1,827	1,222	1,782	1,913
Tenterfield	1,157	1,544	1,682	1,132	1,548	1,581	1,199	1,642	1,673
Tumut	1,133	1,626	1,725	1,046	1,526	1,671	1,136	1,639	1,778
Utharra	1,088	1,450	1,549	1,045	1,407	1,538	1,126	1,508	1,653
Wagga Wagga	1,066	1,770	1,800	1,056	1,786	1,794	1,182	1,911	1,923
Walcha	1,078	1,440	1,621	1,048	1,463	1,618	1,198	1,666	1,758
Wellington	1,111	1,492	1,645	1,058	1,415	1,577	1,237	1,598	1,704
Weston	1,196	1,603	1,656	1,077	1,558	1,582	1,157	1,618	1,684
Windsor	1,141	1,602	1,766	1,077	1,558	1,703	1,142	1,622	1,767
Wollongong	1,147	1,706	1,762	1,117	1,665	1,698	1,173	1,724	1,785
Wyalong	1,171	1,615	1,654	1,135	1,530	1,595	1,236	1,631	1,697
Yass	1,149	1,593	1,724	1,127	1,593	1,749	1,247	1,765	1,896
Young	1,057	1,582	1,643	1,056	1,632	1,701	1,204	1,769	1,862
Weighted Average for State (74 Towns)	1,129	1,656	1,776	1,078	1,613	1,757	1,187	1,727	1,871
VICTORIA—									
Melbourne	1,036	1,573	1,728	968	1,518	1,684	1,084	1,647	1,795
Ballarat	1,040	1,316	1,485	1,002	1,297	1,491	1,127	1,440	1,624
Bendigo	1,049	1,426	1,574	1,002	1,375	1,507	1,130	1,503	1,651
Geelong	1,027	1,580	1,655	984	1,495	1,610	1,099	1,572	1,691
Warrnambool	1,007	1,424	1,584	961	1,377	1,538	1,103	1,537	1,698
Araar	1,175	1,543	1,674	1,088	1,494	1,614	1,161	1,551	1,695
Bacchus Marsh	1,013	1,467	1,573	1,033	1,494	1,573	1,153	1,613	1,686
Bairnsdale	1,091	1,486	1,651	1,040	1,427	1,600	1,167	1,528	1,732
Beechworth	1,102	1,407	1,447	1,047	1,333	1,382	1,178	1,481	1,517
Benalla	1,076	1,427	1,488	1,057	1,433	1,504	1,151	1,546	1,592
Camperdown	1,072	1,445	1,587	1,056	1,411	1,575	1,113	1,508	1,639
Casterton	1,064	1,453	1,565	1,032	1,438	1,541	1,108	1,397	1,527
Castlemaine	1,079	1,334	1,481	1,002	1,232	1,425	1,102	1,683	1,771
Colac	1,025	1,558	1,685	1,009	1,568	1,696	1,116	1,234	1,293
Creswick	1,055	1,186	1,249	1,008	1,131	1,190	1,116	1,234	1,293
Daylesford	1,040	1,369	1,435	1,034	1,363	1,429	1,076	1,372	1,438
Dunolly	1,055	1,206	1,272	1,023	1,194	1,234	1,118	1,272	1,361

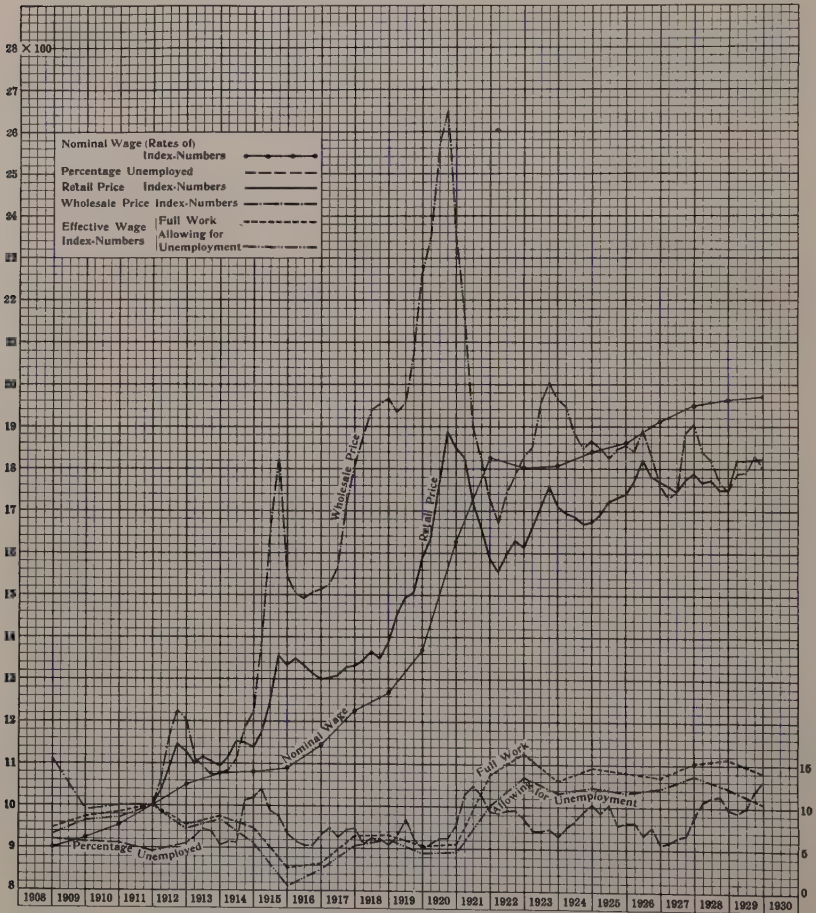
INDEX-NUMBERS.—COST OF FOOD, GROCERIES, AND HOUSING IN 200 TOWNS, ETC.—*continued.*

State and Town.	1927. November.			1928. November.			1929. November.		
	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.
	A	B	C	A	B	C	A	B	C
VICTORIA—continued.									
Echuca	1,091	1,483	1,634	1,017	1,433	1,593	1,113	1,548	1,715
Euroa	1,103	1,422	1,586	1,083	1,427	1,590	1,156	1,504	1,686
Hamilton	1,082	1,523	1,630	1,033	1,455	1,646	1,162	1,633	1,774
Healesville	1,054	1,423	1,482	1,039	1,377	1,503	1,173	1,504	1,594
Horsham	1,139	1,687	1,846	1,117	1,644	1,832	1,218	1,731	1,885
Kerang	1,096	1,629	1,820	1,001	1,582	1,714	1,155	1,748	1,879
Koroit	1,038	1,321	1,377	1,008	1,298	1,368	1,102	1,382	1,448
Korumburra	1,118	1,579	1,677	1,038	1,476	1,580	1,153	1,614	1,679
Kyneton	1,057	1,425	1,501	1,019	1,387	1,468	1,122	1,458	1,583
Lilydale	1,088	1,450	1,648	1,025	1,404	1,563	1,179	1,567	1,732
Maldon	1,031	1,632	1,722	981	1,559	1,639	1,106	1,671	1,763
Maryborough	1,066	1,222	1,284	1,040	1,185	1,238	1,124	1,279	1,325
Mildura	1,097	1,369	1,477	1,055	1,350	1,472	1,160	1,524	1,623
Morwell	1,136	1,757	1,906	1,108	1,698	1,873	1,217	1,843	2,000
Nilhil	1,120	1,638	1,783	1,045	1,554	1,685	1,115	1,628	1,723
Orbost	1,116	1,589	1,688	1,089	1,582	1,697	1,248	1,748	1,906
Portland	1,093	1,476	1,751	1,088	1,494	1,733	1,182	1,560	1,757
Port Fairy	1,081	1,394	1,522	1,047	1,376	1,474	1,162	1,475	1,656
St. Arnaud	1,062	1,391	1,470	1,035	1,347	1,424	1,109	1,409	1,507
Sale	1,188	1,586	1,813	1,107	1,462	1,699	1,206	1,535	1,812
Seymour	1,021	1,409	1,588	984	1,342	1,545	1,110	1,450	1,661
Shepparton	1,135	1,497	1,543	1,105	1,433	1,532	1,186	1,581	1,673
Stawell	1,082	1,615	1,789	1,022	1,582	1,756	1,172	1,755	1,874
Swan Hill	1,169	1,485	1,632	1,132	1,459	1,602	1,232	1,580	1,721
Terang	1,125	1,757	1,889	1,074	1,732	1,837	1,139	1,819	1,929
Traralgon	1,066	1,459	1,581	1,023	1,417	1,536	1,137	1,480	1,683
Wangaratta	1,037	1,454	1,604	1,011	1,450	1,697	1,082	1,489	1,643
Warraknabcal	1,120	1,585	1,697	1,087	1,511	1,630	1,195	1,636	1,832
Warragul	1,076	1,636	1,699	1,067	1,587	1,743	1,210	1,676	1,838
Wonthaggi	1,062	1,608	1,743	994	1,496	1,672	1,075	1,573	1,746
Weighted Average for State (48 Towns)	1,105	1,488	1,611	1,028	1,404	1,568	1,088	1,468	1,614
QUEENSLAND—	1,048	1,550	1,700	981	1,497	1,658	1,096	1,623	1,770
Brisbane	1,004	1,389	1,553	997	1,392	1,528	1,010	1,409	1,542
Toowoomba	968	1,291	1,444	948	1,252	1,419	1,010	1,310	1,475
Tookhampton	1,052	1,362	1,482	1,046	1,331	1,449	1,074	1,355	1,474
Charters Towers	1,200	1,481	1,542	1,163	1,510	1,598	1,122	1,521	1,561
Warwick	1,026	1,370	1,509	998	1,344	1,409	1,042	1,392	1,452
Ayr	1,170	1,631	1,762	1,183	1,643	1,775	1,197	1,688	1,771
Barcaldine	1,249	1,545	1,663	1,253	1,582	1,678	1,265	1,669	1,728
Bowen	1,139	1,528	1,656	1,136	1,531	1,697	1,197	1,592	1,731
Bundaberg	1,032	1,363	1,416	1,030	1,329	1,441	1,011	1,384	1,478
Cairns	1,174	1,731	1,876	1,115	1,656	1,773	1,192	1,766	1,904
Charleville	1,154	1,631	1,771	1,139	1,578	1,812	1,181	1,604	1,839
Chillagoe	1,225	1,489	1,541	1,236	1,499	1,552	1,279	1,542	1,695
Cloncurry	1,231	1,616	1,729	1,253	1,648	1,779	1,310	1,705	1,836
Cooktown	1,147	1,239	1,323	1,193	1,286	1,351	1,249	1,446	1,499
Cunnamulla	1,235	1,695	1,761	1,186	1,647	1,706	1,251	1,711	1,803
Dalby	1,011	1,350	1,449	1,009	1,362	1,454	1,099	1,415	1,570
Gayndah	1,059	1,323	1,454	1,142	1,438	1,537	1,161	1,477	1,556
Gladstone	1,040	1,303	1,435	1,052	1,341	1,437	1,105	1,414	1,499
Goondiwindi	1,092	1,473	1,566	1,094	1,501	1,574	1,187	1,608	1,648
Gympie	1,044	1,373	1,489	1,074	1,412	1,528	1,100	1,464	1,525
Hughenden	1,245	1,738	1,870	1,239	1,719	1,844	1,287	1,748	1,868
Innisfail	1,266	1,885	2,046	1,255	1,848	2,054	1,328	1,940	2,118
Ipswich	1,033	1,339	1,487	1,069	1,394	1,524	1,027	1,357	1,457
Longreach	1,252	1,613	1,772	1,228	1,561	1,762	1,263	1,575	1,776
Mackay	1,086	1,590	1,694	1,103	1,637	1,730	1,147	1,707	1,851
Maryborough	1,009	1,285	1,437	1,050	1,319	1,461	1,106	1,418	1,619
Mount Morgan	1,100	1,253	1,284	1,111	1,243	1,295	1,189	1,321	1,387
Nambour	1,080	1,441	1,586	1,098	1,470	1,572	1,120	1,485	1,610
Roma	1,053	1,416	1,571	1,091	1,459	1,610	1,145	1,581	1,705
Stanthorpe	1,015	1,337	1,523	1,036	1,395	1,517	1,135	1,531	1,595
Townsville	1,186	1,672	1,771	1,191	1,677	1,763	1,158	1,631	1,730
Winton	1,236	1,719	1,796	1,265	1,725	1,822	1,286	1,746	1,834
Weighted Average for State (32 Towns)	1,042	1,412	1,555	1,040	1,415	1,542	1,057	1,439	1,564



EXPLANATION.—The scale refers to working days lost in hundred thousands. Thus, taking the year 1917, and comparing the shaded and blank sections with the scale, it will be observed that about 870,000 working days were lost in Manufacturing and Building, over 1,300,000 in Mining, over 2,300,000 in Transport, and about 150,000 in other industries.

RETAIL AND WHOLESALE PRICES, NOMINAL AND EFFECTIVE WAGE INDEX NUMBERS, AND PERCENTAGE OF UNEMPLOYED.—AUSTRALIA, 1908 TO 1929.



NOTE.—The figures on the right represent the scale for the percentage unemployed according to trade-union returns. The figures on the left represent the scale for the several index-numbers, the year 1911 being taken in each case as base (= 1000). Since the end of the year 1911, the Retail Price Index-numbers (weighted average cost of food, groceries, and house rent for the six capital cities), and the Wholesale Price Index-number (Melbourne) are shown in each quarter, while unemployment percentages are shown quarterly since the end of the year 1912 only. The other index-numbers since 1913 refer to the average for the whole year, but for purposes of convenience are plotted on the graph as at the end, not the middle, of the year. Retail Price and Wholesale Price Index-numbers show the average level during the whole of each quarter, and they also for convenience are plotted at the end, and not the middle, of each quarter.

INDEX-NUMBERS.—COST OF FOOD, GROCERIES, AND HOUSING IN 200 TOWNS, ETC.—*continued.*

State and Town.	1927. November.			1928. November.			1929. November.		
	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries, and Rent of 4-Roomed Houses.	Food, Groceries, and Rent of 5-Roomed Houses.
	A	B	C	A	B	C	A	B	C
SOUTH AUSTRALIA—									
Adelaide	1,079	1,567	1,702	997	1,509	1,673	1,124	1,619	1,740
Kadina, etc. ..	1,116	1,370	1,462	1,098	1,326	1,422	1,235	1,432	1,475
Port Pirie	1,109	1,490	1,594	1,073	1,452	1,564	1,198	1,569	1,675
Mount Gambier ..	1,063	1,310	1,413	1,023	1,279	1,381	1,102	1,360	1,465
Peterborough ..	1,158	1,568	1,655	1,161	1,572	1,656	1,258	1,664	1,780
Freeling	1,063	1,424	1,490	1,063	1,392	1,507	1,112	1,441	1,556
Gawler	1,052	1,395	1,480	1,040	1,364	1,471	1,134	1,428	1,520
Kapunda	1,062	1,266	1,326	1,007	1,204	1,277	1,172	1,418	1,435
Koorunga	1,090	1,419	1,485	1,060	1,389	1,455	1,164	1,493	1,559
Millicent	961	1,317	1,402	965	1,340	1,402	1,052	1,477	1,559
Murray Bridge ..	1,113	1,508	1,661	1,036	1,456	1,560	1,128	1,506	1,613
Port Augusta ..	1,210	1,586	1,642	1,243	1,630	1,710	1,323	1,710	1,790
Quorn	1,115	1,480	1,503	1,060	1,391	1,445	1,287	1,561	1,654
Victor Harbour ..	1,078	1,604	1,802	1,034	1,561	1,758	1,153	1,734	1,898
Renmark	1,191	1,651	1,743	1,207	1,657	1,800	1,287	1,780	1,923
Weighted Average for State (15 Towns) ..	1,083	1,545	1,673	1,011	1,492	1,645	1,136	1,601	1,717
WESTERN AUSTRALIA—									
Perth and Fremantle ..	1,052	1,516	1,649	1,126	1,593	1,718	1,095	1,567	1,721
Kalgoorlie and Boulder ..	1,188	1,495	1,564	1,271	1,582	1,662	1,279	1,580	1,657
Northam	1,157	1,626	1,750	1,196	1,642	1,795	1,186	1,619	1,803
Bunbury	1,179	1,535	1,636	1,201	1,541	1,665	1,229	1,566	1,677
Geraldton	1,172	1,610	1,777	1,162	1,659	1,839	1,198	1,678	1,881
Albany	1,193	1,518	1,597	1,282	1,611	1,693	1,195	1,613	1,616
Beverley	1,174	1,453	1,536	1,199	1,489	1,548	1,187	1,483	1,549
Bridge town	1,220	1,592	1,647	1,272	1,622	1,667	1,266	1,649	1,693
Broome	1,380	1,963	2,104	1,390	1,926	2,015	1,456	1,932	2,114
Carnarvon	1,327	1,821	1,985	1,321	1,795	1,963	1,347	1,808	1,956
Collie	1,237	1,723	1,764	1,244	1,704	1,764	1,234	1,712	1,817
Greenbushes	1,247	1,445	1,497	1,266	1,477	1,529	1,234	1,477	1,550
Katanning	1,038	1,444	1,548	1,154	1,502	1,614	1,173	1,565	1,745
Leonora and Gwalia ..	1,336	1,546	1,677	1,369	1,566	1,632	1,412	1,609	1,675
Meekatharra	1,385	1,648	1,714	1,367	1,630	1,715	1,378	1,642	1,734
Narrogin	1,131	1,671	1,789	1,185	1,759	1,843	1,173	1,711	1,826
Wagin	1,093	1,428	1,537	1,182	1,544	1,636	1,124	1,535	1,606
York	1,061	1,427	1,529	1,124	1,460	1,562	1,130	1,466	1,568
Weighted Average for State (18 Towns) ..	1,087	1,525	1,648	1,155	1,596	1,713	1,132	1,576	1,719
TASMANIA—									
Hobart	1,025	1,506	1,666	1,016	1,487	1,658	1,096	1,573	1,712
Launceston	1,011	1,417	1,574	982	1,386	1,573	1,087	1,492	1,692
Burnie	1,052	1,473	1,600	1,047	1,496	1,596	1,163	1,586	1,731
Devonport	1,015	1,455	1,527	1,016	1,430	1,460	1,116	1,565	1,603
Queens town	1,150	1,430	1,440	1,130	1,394	1,407	1,215	1,527	1,557
Beaconsfield	1,009	1,114	1,140	989	1,094	1,120	1,052	1,144	1,183
Campbelltown	1,045	1,236	1,281	975	1,163	1,212	1,079	1,266	1,315
Deloraine	978	1,320	1,373	953	1,295	1,348	1,019	1,393	1,440
Franklin	1,021	1,231	1,284	1,024	1,235	1,288	1,118	1,328	1,381
New Norfolk	998	1,333	1,406	995	1,317	1,403	1,067	1,382	1,461
Scottsdale	986	1,284	1,359	980	1,265	1,379	1,084	1,374	1,466
Ulverstone	1,026	1,335	1,460	1,000	1,315	1,421	1,080	1,409	1,511
Zeehan	1,193	1,382	1,427	1,139	1,387	1,430	1,293	1,490	1,523
Weighted Average for State (13 Towns) ..	1,028	1,455	1,594	1,013	1,434	1,583	1,102	1,529	1,666
Weighted Average for Australia (200 Towns) ..	1,082	1,570	1,703	1,040	1,536	1,683	1,133	1,634	1,773

By deducting the index-number in column A from those in column B or C, the relative aggregate expenditure on housing accommodation can be ascertained. Thus for November, 1929, the index-number for food and groceries in Melbourne (column A) is 1,084. Subtracting this from 1,647 (column B) gives a difference of 563, which is the relative cost of house rent for houses of 4 rooms, and from 1,795 (column C) gives a difference of 711, which is the relative cost of house rent for houses of 5 rooms.

Similarly the relative cost of housing accommodation can be ascertained for each of the towns included.

A table showing the retail price index-numbers (food and groceries) for each of the thirty towns for various months since July, 1914, appeared in previous issues, but consideration of space precludes its repetition in the present issue. This table is, however, given in the Quarterly Summary of Australian Statistics issued by the Bureau.

§ 4. Variations in the Cost of Food, Groceries, Rent, Clothing, and Miscellaneous Expenditure.

1. *General.*—The index-numbers in § 3 show the variations in the cost of food, groceries and house rent. The expenditure on these items covers approximately 60 per cent. of the total expenditure of the ordinary household. The balance is expended on clothing, boots, fuel, light, and such miscellaneous items as renewals of furniture, furnishings, drapery, crockery, lodge dues, trade union dues, recreation, newspapers, etc. The Royal Commission on the Basic Wage in 1920 recommended in its report that a method should be adopted of ascertaining from time to time the rise and fall in the purchasing-power of money in its relation to the total household expenditure. The Government adopted the recommendation, and the duty of carrying out the necessary investigations was entrusted to the Bureau of Census and Statistics, which adopted the methods hereunder described.

2. *Methods Adopted.*—After careful investigation it was decided to adopt for food, groceries, and house rent, the commodities, method, and weighting used by this Bureau. The commodities and quantities adopted for food and groceries conform very closely to those given in the Indicator Lists of the Commission. With regard to rent, the Commission adopted a certain type of five-roomed house as its standard for determining the amount allowed for housing. The investigations made by this Bureau are not confined to a particular type of house, but the average rentals paid for houses of four and five rooms are taken. The results can be used with safety to show the variations in the type of house described by the Commission.

The investigations of this Bureau advisedly had been confined to food, groceries, and house rent, and it was necessary, therefore, to make investigations into the cost of clothing and miscellaneous expenditure. With regard to clothing, the Basic Wage Commission collected a large amount of information as to prices and life of articles, and this has been utilized in computing the index-numbers given in the following tables.

With regard to Miscellaneous Expenditure, which covers a very wide field, inquiries were made as to variations in cost of fuel and light, household utensils, drapery, crockery, etc., also with regard to other items included in the Indicator Lists for Miscellaneous Expenditure, and the aggregate expenditure on these items has been computed in the same manner as that for clothing.

3. *Period Selected as Base.*—For the new series of index-numbers November, 1914, was adopted as base owing to the difficulty of securing information with regard to prices of clothing and miscellaneous items for earlier years.

4. *Variations in Cost in the Capital Cities.**—The index-numbers in the following table show the variations not only in each city from period to period, but also as between the various cities at any given period. Thus, the increase in cost in the six capital cities from November, 1914, was greatest in November, 1920, when it amounted to 69.7 per cent. The increase for the year 1929, compared with November, 1914, was 50.3 per cent. Further, in 1929 the cost of the commodities and services included was greatest in Sydney (1,561) and least in Brisbane (1,344).

* In Labour Report No. 20, index-numbers are given showing the relative cost from November, 1925 to end of 1929 in 30 of the principal towns in Australia.

INDEX-NUMBERS, TOTAL HOUSEHOLD EXPENDITURE, CAPITAL CITIES.— 1914 TO 1929.

(NOTE.—Weighted average cost in November, 1914, for all items in capital cities taken as base = 1,000).

Cities.	November.			Year.				
	1914.	1921.	1922.	1925.	1926.	1927.	1928.	1929.
Sydney ..	1,036	1,523	1,486	1,478	1,503	1,498	1,516	1,561
Melbourne ..	976	1,460	1,402	1,432	1,453	1,441	1,444	1,481
Brisbane ..	889	1,344	1,276	1,344	1,383	1,342	1,334	1,344
Adelaide ..	1,018	1,440	1,388	1,496	1,493	1,482	1,495	1,509
Perth ..	1,029	1,467	1,355	1,446	1,444	1,433	1,472	1,493
Hobart ..	999	1,556	1,450	1,496	1,506	1,453	1,425	1,456
Weighted Average	1,000	1,474	1,420	1,451	1,471	1,458	1,469	1,503

B.—WAGES.

§ 1. Operations under Wages Board and Industrial Arbitration Acts.

1. **General.**—Particulars of the operations of Wages Boards and Industrial and Arbitration Courts under the Commonwealth and State Acts for the regulation of wages, hours, and conditions of labour were first compiled to the 31st December, 1913, and reviews to the end of approximately quarterly periods appear in Labour Reports and Quarterly Summaries to the 31st December, 1929.

2. **Awards, Determinations. Industrial Agreements.**—The following table gives a summary for each of the years 1925 to 1929:—

AWARDS AND DETERMINATIONS MADE AND INDUSTRIAL AGREEMENTS FILED, 1925 TO 1929.

State.	1925.		1926.		1927.		1928.		1929.	
	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.
New South Wales ..	32	35	151	51	163	33	93	36	55	27
Victoria ..	67	..	106	..	74	..	73	..	46	..
Queensland ..	105	33	90	27	56	18	34	27	21	16
South Australia ..	47	5	14	7	15	4	14	4	13	9
Western Australia ..	4	66	10	37	6	57	19	28	15	29
Tasmania ..	5	1	7	2	4	..	10	3	4	..
Commonwealth Court	56	42	50	30	34	25	40	30	29	26
Commonwealth Public Service Arbitrator ..	4	..	10	..	1	..	6	..	4	..
Total ..	320	182	438	154	353	137	289	128	187	109

3. **Boards Authorized, Awards, etc., in Force.**—(i) *Totals for Australia.* The following table gives particulars at the dates specified for all States of Boards authorized, etc., and including operations under the Commonwealth and State Arbitration Acts, of the number of awards, determinations, and industrial agreements in force:—

BOARDS AUTHORIZED, ETC., AWARDS, ETC.—AUSTRALIA, 1913 TO 1929.

Dates.	Boards Autho- rized.	Boards Con- stituted.	Boards which had made Awards or Deter- minations.	Awards or Deter- minations in Force.(a)	Industrial Agree- ments in Force.
31st December, 1913	505	501	387(b)	575(c)	401
31st December, 1915	573	554	498	663	546
31st December, 1920	475	470	440	1,041	972
31st December, 1925	575	541	524	1,181	607
31st December, 1929	643	588	567	1,297	605

(a) Including awards made by Arbitration Courts and the Commonwealth Public Service Arbitrator.

(b) Owing to the fact that a number of awards under the New South Wales Industrial Disputes Act (1908) were still in force, the Boards constituted for such industries under the Industrial Arbitration Act (1912) had not made any awards. (c) Excluding awards or determinations which expired in New South Wales (under the Act of 1908) on 31st December, 1913.

Considerable expansion of the principle of the fixation of a legal minimum rate of wage and of working conditions took place during the period under review. At the end of 1929, the number of awards or determinations and industrial agreements* in force had increased by 722 and 204 respectively over the number in force at the 31st December, 1913.

(ii) *Summary for States.* The following table gives particulars for each State and the Commonwealth of the number of Boards authorized, etc., for the years specified :—

BOARDS AUTHORIZED, AWARDS, ETC.—SUMMARY, 1913, AND 1929.

Particulars.	At 31st Dec.	Commonwealth		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
		Court.	Pub. Ser. Arb.							
<i>Industrial and Wages—</i>										
Boards authorized ..	{ 1913 .. ..	..	..	216	135	75	56	..	23	505
	{ 1929 .. ..	..	..	309	185	2	77	16	54	643
Boards which have made	{ 1913 .. ..	..	..	123	123	74	47	..	19	386
Determinations ..	{ 1929 .. ..	..	..	277	169	..	55	15	51	567
<i>Awards and Determinations—</i>										
In force ..	{ 1913 17 ..	..	..	265	127	73	54	18	21	575
	{ 1929 166 ..	39	..	458	178	247	72	86	51	1,297
<i>Industrial Agreements—</i>										
In force ..	{ 1913 228 ..	..	..	75	..	5	11	82	..	401
	{ 1929 145 ..	..	..	113	..	116	29	196	6	605
<i>Commonwealth Court</i>										
<i>Awards—</i>										
Number in force in each	{ 1913 .. ..	..	..	13	17	15	16	9	13	..
State ..	{ 1929 .. ..	..	..	92	116	25	80	32	59	..
<i>Commonwealth Agreements—</i>										
Number in force in each	{ 1913 .. ..	..	..	132	129	68	62	57	61	..
State ..	{ 1929 .. ..	..	..	41	59	14	24	11	35	..
<i>Commonwealth Public Service</i>										
<i>Arbitrator—</i>										
Number of Determinations	1929 .. ..	..	..	36	32	28	29	28	27	..
in force in each State ..										

§ 2. Rates of Wage and Hours of Labour.

1. *General.*—The collection of information respecting the current rates of wage payable in different callings and in occupations in various industries was first undertaken by the Bureau in the early part of the year 1913. The particulars are obtained primarily from awards, determinations and agreements, under Commonwealth and State Industrial Acts, and therefore are the minimum rates prescribed. They refer generally to the capital city in each State, but in industries which obviously are not carried on in the capital cities,

* The registration of industrial agreements is not provided for under the Victorian Act, but such agreements may be registered and filed under the provisions of the Commonwealth Conciliation and Arbitration Act, and are operative within the State.

e.g., mining, agriculture, etc., the rates in the more important centres are taken. In cases where no award, determination, or agreement is in force, particulars are taken of the ruling union or predominant rate. During recent years the number of predominant rates of wage included in the tabulations has been reduced considerably, since most of the industries and occupations are now covered by awards, determinations, or industrial agreements.

The index-numbers for male adult workers are computed with the weighted average wage in 1911 as base (= 1,000) in order that comparisons might more readily be made between these index-numbers and the retail prices index-numbers which are also computed to the year 1911 as base. In the case of females, however, it has not been possible to secure information for years prior to 1914, and the index-numbers are therefore computed with the weighted average rate of wage payable to adult female workers in Australia at 30th April, 1914, as base (= 1,000).

An extensive tabular presentation of the minimum rates of wage for adult male and female workers in the main occupations in the capital city of each State is given in the Appendix to Labour Report, No. 20.

2. Weekly Rates of Wage, 1925 to 1929.—(i) *General.* The arithmetical average of the rates of wage given in the Appendix referred to furnishes the basis for the computation of relative weighted wages in the different States and industrial groups.

(ii) *Adult Males—States.* The following table gives the weighted average nominal weekly rates of wage payable to adult male workers at the dates specified.

WAGES.—ADULT MALES—WEIGHTED AVERAGE NOMINAL WEEKLY RATE PAYABLE FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS, 31st DECEMBER, 1925 TO 1929.

NOTE.—Index-numbers based on the average wage for Australia in 1911 (5ls. 3d.) as base (= 1,000). The index-numbers in this table are comparable throughout.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia. (a)
No. of Occupations included ..	874	909	627	567	489	482	3,948

RATES OF WAGE.

	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>
31st December, 1925 ..	96	0	97	2	99	11	94	4	97	0	93	5	96	9
31st December, 1926 ..	100	5	99	6	100	1	95	8	98	9	94	10	99	4
31st December, 1927 ..	101	10	100	3	100	1	96	7	98	10	93	10	100	2
31st December, 1928 ..	102	7	99	8	101	2	96	2	99	6	93	3	100	5
31st March, 1929 ..	102	7	99	6	101	2	95	11	100	1	93	4	100	4
30th June, 1929 ..	103	6	100	10	101	4	97	2	100	5	94	7	101	4
30th September, 1929 ..	103	6	101	1	101	4	97	5	100	8	94	7	101	5
31st December, 1929 ..	102	11	101	1	101	2	97	2	100	7	94	8	101	2

INDEX-NUMBERS.

	1,873	1,897	1,950	1,841	1,893	1,823	1,887
31st December, 1925 ..	1,873	1,897	1,950	1,841	1,893	1,823	1,887
31st December, 1926 ..	1,959	1,941	1,952	1,867	1,927	1,851	1,938
31st December, 1927 ..	1,988	1,957	1,953	1,885	1,928	1,832	1,955
31st December, 1928 ..	2,001	1,944	1,974	1,877	1,941	1,820	1,959
31st March, 1929 ..	2,001	1,941	1,974	1,871	1,952	1,820	1,958
30th June, 1929 ..	2,020	1,968	1,976	1,895	1,959	1,845	1,977
30th September, 1929 ..	2,020	1,973	1,977	1,901	1,964	1,846	1,979
31st December, 1929 ..	2,007	1,972	1,975	1,896	1,963	1,848	1,974

(a) Weighted average.

The results show that at the 31st December, 1929, the weighted average nominal weekly rate of wage was highest in New South Wales, followed in the order named by Queensland, Victoria, Western Australia, South Australia, and Tasmania. Little movement in wages occurred in the first quarter of 1929 as compared with the previous quarter. The average rates of wage increased in all States during the second quarter, and further small increases in Victoria, South Australia, and Western Australia during the third quarter brought the weighted average rate of wage to 101s. 5d., the highest average so far recorded. Slight decreases in the wage rates in New South Wales, Queensland, South Australia, and Western Australia during the fourth quarter caused the average nominal rate of wage for Australia to decline to 101s. 2d.

(iii) *Adult Males—Industrial Groups.* The following table shows the average weekly rate of wage and index numbers in each industrial group, and for all groups at the periods specified.

WAGES.—ADULT MALES—WEIGHTED AVERAGE NOMINAL WEEKLY RATE FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH INDUSTRIAL GROUP, 31st DECEMBER, 1925 TO 1929.

NOTE.—Index-numbers for each industrial group and all industrial groups, based on the average wage for all groups in 1911 (51s. 3d.), as base (= 1,000). The index-numbers in this table are comparable throughout.

Industrial Group.	Weighted Average Nominal Weekly Rate of Wage, and Index-Number at—							
	31st Dec., 1925.	31st Dec., 1926.	31st Dec., 1927.	31st Dec., 1928.	31st March, 1929.	30th June, 1929.	30th Sept., 1929.	31st Dec., 1929.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
I. Wood, Furniture, etc.	Wage .. 101.2	104.5	104.6	103.11	103.11	104.7	104.8	104.10
	Index-No. 1,973	2,037	2,039	2,028	2,028	2,040	2,042	2,046
II. Engineering, etc.	Wage .. 100.4	102.0	102.10	102.1	102.1	103.9	103.11	103.6
	Index-No. 1,957	1,991	2,006	1,993	1,992	2,024	2,028	2,019
III. Food, Drink, etc.	Wage .. 96.6	98.9	99.8	99.9	99.9	100.10	101.1	100.10
	Index-No. 1,883	1,926	1,944	1,947	1,946	1,967	1,973	1,967
IV. Clothing, Boots, etc.	Wage .. 93.2	96.6	98.3	99.4	99.4	99.4	100.0	99.6
	Index-No. 1,817	1,883	1,917	1,939	1,939	1,939	1,950	1,942
V. Books, Printing, etc.	Wage .. 109.6	111.5	113.7	117.10	117.6	117.6	119.3	119.1
	Index-No. 2,137	2,173	2,216	2,299	2,292	2,292	2,327	2,323
VI. Other Manu- facturing	Wage .. 98.2	100.6	101.4	100.8	100.5	102.2	102.7	102.2
	Index-No. 1,915	1,961	1,977	1,964	1,959	1,993	2,001	1,994
VII. Building	Wage .. 108.5	110.9	112.10	112.4	112.5	113.5	113.5	113.0
	Index-No. 2,115	2,160	2,202	2,191	2,193	2,213	2,214	2,205
VIII. Mining, etc.	Wage .. 108.7	109.6	109.9	109.10	109.9	110.6	110.6	110.7
	Index-No. 2,119	2,137	2,142	2,143	2,141	2,156	2,157	2,157
IX. Railways, etc.	Wage .. 100.6	102.6	103.1	102.2	102.4	105.2	105.2	105.2
	Index-No. 1,962	2,001	2,012	1,994	1,997	2,052	2,052	2,052
X. Other Land Transport	Wage .. 93.3	95.6	97.4	96.3	96.3	97.8	97.8	96.9
	Index-No. 1,820	1,863	1,900	1,878	1,878	1,905	1,905	1,888
XI. Shipping, etc. (a)	Wage .. 104.8	103.7	103.7	103.3	103.3	106.7	106.7	107.0
	Index-No. 2,043	2,020	2,021	2,014	2,014	2,079	2,079	2,087
XII. Agricultural, etc. (b)	Wage .. 87.4	93.5	94.3	95.9	95.10	95.10	95.10	95.6
	Index-No. 1,704	1,823	1,839	1,869	1,870	1,870	1,870	1,863
XIII. Domestic, etc. (b)	Wage .. 89.1	90.10	93.3	93.3	93.3	93.3	93.5	92.6
	Index-No. 1,738	1,772	1,820	1,820	1,820	1,820	1,823	1,804
XIV. Miscellaneous	Wage .. 93.11	95.6	96.0	96.1	96.0	96.11	97.0	96.8
	Index-No. 1,833	1,863	1,872	1,874	1,873	1,891	1,893	1,886
All Industrial Groups (c)	Wage .. 96.9	99.4	100.2	100.5	100.4	101.4	101.5	101.2
	Index-No. 1,837	1,938	1,955	1,959	1,958	1,977	1,979	1,974

(a) Including the value of victualling and accommodation where supplied. (b) Including the value of board and lodging where supplied. (c) Weighted average.

The foregoing table shows that the rate of increase in the weighted average weekly wage in occupations and callings classified in industrial groups during the period 31st December, 1925 to 1929, was greatest in Group XII. (Agricultural, etc.), 9.3 per cent.; followed by Group V. (Books, Printing, etc.), 8.7 per cent.; Group IV. (Clothing, Boots, etc.), 6.9 per cent.; and Group IX. (Railways, etc.), 4.6 per cent.

The smallest increase occurred in Group VIII. (Mining), 1.8 per cent. Compared with the fourth quarter of 1928, increases occurred in twelve groups, while in two groups small decreases were recorded. The increase was greatest in Group XI. (Shipping, etc.), 3.6 per cent.; followed by Group IX. (Railways, etc.), 2.9 per cent.; and Group VI. (Other Manufacturing), 1.5 per cent. Small decreases were recorded in Groups XII. (Agricultural, etc.) and XIII. (Domestic, etc.). The weighted average nominal rate of wage for all Groups increased from 100s. 5d. to 101s. 2d., or 0.8 per cent. during the twelve months under review.

(iv) *Adult Females—States.* The following table shows the weighted average weekly rate of wage payable to adult female workers for a full week's work in each State and Australia at the dates specified.

WAGES.—ADULT FEMALES—WEIGHTED AVERAGE NOMINAL WEEKLY RATE PAYABLE FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS, 31st DECEMBER, 1925 TO 1929.

NOTE.—Index-numbers based on the average wage for Australia at the 30th April, 1914 (27s. 2d.) as base (= 1,000). The index-numbers in this table are comparable throughout.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Australia.(a)
No. of Occupations Included ..	85	87	37	47	24	28	308

RATES OF WAGE.

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
31st December, 1925 ..	49 8	50 8	51 9	48 10	57 6	50 2	50 7
31st December, 1926 ..	50 8	51 11	52 10	50 0	58 6	51 8	51 8
31st December, 1927 ..	53 0	52 7	53 5	49 11	58 8	52 7	52 10
31st December, 1928 ..	53 7	53 9	54 10	50 11	58 10	53 4	53 10
31st March, 1929 ..	53 7	53 9	54 10	50 11	58 10	53 4	53 10
30th June, 1929 ..	53 7	53 10	54 10	50 11	58 10	53 4	53 10
30th September, 1929 ..	54 1	54 1	54 10	51 3	58 10	53 7	54 2
31st December, 1929 ..	53 11	54 1	54 10	51 4	58 10	53 9	54 1

INDEX-NUMBERS.

	1,827	1,866	1,904	1,796	2,116	1,845	1,861
31st December, 1925 ..	1,827	1,866	1,904	1,796	2,116	1,845	1,861
31st December, 1926 ..	1,865	1,911	1,944	1,839	2,152	1,902	1,902
31st December, 1927 ..	1,950	1,934	1,966	1,838	2,160	1,935	1,945
31st December, 1928 ..	1,973	1,979	2,017	1,875	2,164	1,964	1,980
31st March, 1929 ..	1,972	1,978	2,017	1,875	2,164	1,964	1,980
30th June, 1929 ..	1,973	1,980	2,017	1,875	2,164	1,964	1,980
30th September, 1929 ..	1,992	1,989	2,020	1,887	2,165	1,973	1,992
31st December, 1929 ..	1,983	1,990	2,020	1,888	2,165	1,978	1,990

(a) Weighted average.

There was an increase in the nominal rates of wage in all States during 1928, with the result that the average wage for females for Australia increased from 52s. 10d. at 31st December, 1927, to 53s. 10d. by the end of 1928. Wages for female employees remained stationary during the first and second quarters of 1929. Increases were recorded in four States during the third quarter, raising the average nominal wage for Australia to 54s. 2d. per week. the highest average rate recorded.

(v) *Adult Females—Industrial Groups.* The following table gives particulars of the weighted average weekly rate of wage payable to adult female workers in the industrial groups in which they are mainly employed, and in all groups combined.

WAGES.—ADULT FEMALES—WEIGHTED AVERAGE NOMINAL WEEKLY RATE PAYABLE FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH INDUSTRIAL GROUP, 31st DECEMBER, 1925 TO 1929.

NOTE.—Index-numbers for each Industrial Group and all Industrial Groups, based on the average wage for all groups at 30th April, 1914 (27s. 2d.), as base (= 1,000). The index-numbers in this table are comparable throughout.

Date.	Industrial Group.						All Groups (b).
	III. Food, Drink, etc.	IV. Clothing, Boots, etc.	I., II., V., and VI., All Other Manufacturing.	XIII. Domestic, Hotels, etc.(a).	XIV. Miscel- laneous.		
RATES OF WAGES.							
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	
31st December, 1925 ..	45 8	50 1	51 2	51 0	52 0	50 7	
31st December, 1926 ..	47 8	51 7	52 10	52 0	52 0	51 8	
31st December, 1927 ..	48 9	52 7	53 2	54 5	52 8	52 10	
31st December, 1928 ..	49 3	54 2	53 1	55 1	52 10	53 10	
31st March, 1929 ..	49 4	54 2	52 11	55 1	52 10	53 10	
30th June, 1929 ..	49 4	54 2	53 1	55 2	52 10	53 10	
30th September, 1929..	49 5	54 6	53 11	55 1	53 4	54 2	
31st December, 1929 ..	49 4	54 4	53 11	54 9	53 10	54 1	
INDEX-NUMBERS.							
31st December, 1925 ..	1,682	1,844	1,884	1,877	1,914	1,861	
31st December, 1926 ..	1,754	1,900	1,943	1,912	1,914	1,902	
31st December, 1927 ..	1,793	1,936	1,958	2,001	1,937	1,945	
31st December, 1928 ..	1,813	1,993	1,954	2,029	1,946	1,980	
31st March, 1929 ..	1,816	1,993	1,947	2,029	1,946	1,980	
30th June, 1929 ..	1,817	1,993	1,954	2,030	1,946	1,980	
30th September, 1929 ..	1,819	2,006	1,984	2,029	1,963	1,992	
31st December, 1929 ..	1,815	1,999	1,984	2,015	1,982	1,990	

(a) Including the value of board and lodging, where supplied.

(b) Weighted average.

During the year 1929 wages in all groups, with the exception of Group XIII. (Domestic, etc.) showed a slight upward trend as compared with 1928, the greatest increase occurring in Group XIV. (Miscellaneous), 1.9 per cent.; followed by Group VI., 1.6 per cent. The weighted average for all groups increased by 0.5 per cent.

3. Relative Hours of Labour and Hourly Rates of Wage, 1925 to 1929.—(i) General. The rates of wage referred to in preceding paragraphs relate to the minimum payable for a full week's work. The number of hours constituting a full week's work differs, however, in many instances between various trades and occupations in each State, and between the same trades and occupations in the several States. In order to secure what may be for some purposes a more adequate standard of comparison, it is desirable to reduce the comparison to a common basis, viz., the rate of wage per hour. Particulars are given in the following table classified according to States, for male and female occupations separately, at the end of the years 1925 to 1929. These particulars relate to (a) the weighted average nominal weekly wage, (b) the weighted average number of working hours constituting a full week's work, and (c) the weighted average hourly wage. The weighted average weekly wage relates to all industrial groups combined, and includes the value of board and lodging where supplied in land occupations, and the value of victualling in marine occupations, whereas the number of working hours and the hourly wage relate to all industrial groups other than Groups XI. (Shipping), and XII. (Agricultural, Pastoral, etc.). Many of the occupations included in these two groups are of a casual or seasonal nature, and the hours of labour in the agricultural and dairying industry are not generally regulated either by awards or determinations of industrial tribunals or otherwise, hence the necessary data for the computation of the average number of working hours are not available.

The general effect of reducing the rates of wage to a common basis (*i.e.*, per hour) is to eliminate on comparison any apparent difference between the several States which may be due to unequal working time.

(ii) *Adult Males and Females.* Particulars of the weekly and hourly wages and hours of labour for adult males and females for the last five years are given in the table hereunder :—

WEEKLY AND HOURLY WAGES AND HOURS OF LABOUR.—ADULT WORKERS, 1925 TO 1929.

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus.
MALE WORKERS.								
31st Dec., 1925	Weekly Wage (a)	s. d. 96 0	s. d. 97 2	s. d. 99 11	s. d. 94 4	s. d. 97 0	s. d. 93 5	s. d. 96 9
	Working Hours (b)	.. 46.76	46.98	43.88	46.97	46.26	47.25	46.44
	Hourly Wage (b)	.. 2/1½	2/1½	2/3½	2/0½	2/1½	2/-	2/1½
31st Dec., 1926	Weekly Wage (a)	s. d. 100 5	s. d. 99 6	s. d. 100 1	s. d. 95 8	s. d. 98 9	s. d. 94 10	s. d. 99 4
	Working Hours (b)	.. 44.55	46.94	43.95	46.95	45.80	47.27	45.57
	Hourly Wage (b)	.. 2/3½	2/2	2/4	2/0½	2/2½	2/0½	2/2½
31st Dec., 1927	Weekly Wage (a)	s. d. 101 10	s. d. 100 3	s. d. 100 1	s. d. 96 7	s. d. 98 10	s. d. 93 10	s. d. 100 2
	Working Hours (b)	.. 44.44	46.82	43.96	46.78	45.75	47.16	45.46
	Hourly Wage (b)	.. 2/3½	2/2½	2/4	2/1½	2/2½	2/0½	2/2½
31st Dec., 1928	Weekly Wage (a)	s. d. 102 7	s. d. 99 8	s. d. 101 2	s. d. 96 2	s. d. 99 6	s. d. 93 8	s. d. 100 5
	Working Hours (b)	.. 44.17	46.70	43.96	46.67	45.30	46.85	45.27
	Hourly Wage (b)	.. 2/4	2/2	2/4	2/1	2/2½	2/0	2/3
31st Dec., 1929	Weekly Wage (a)	s. d. 102 11	s. d. 101 7	s. d. 101 2	s. d. 97 2	s. d. 100 7	s. d. 94 8	s. d. 101 2
	Working Hours (b)	.. 44.14	46.83	43.96	46.83	45.58	47.09	45.84
	Hourly Wage (b)	.. 2/4	2/2½	2/4	2/1½	2/2½	2/0½	2/3
FEMALE WORKERS.								
31st Dec., 1925	Weekly Wage	s. d. 49 8	s. d. 50 8	s. d. 51 9	s. d. 48 10	s. d. 57 6	s. d. 50 2	s. d. 50 7
	Working Hours	.. 46.17	45.83	44.00	46.10	45.57	47.86	45.78
	Hourly Wage	.. 1/1	1/1½	1/2	1/0½	1/3½	1/0½	1/1½
31st Dec., 1926	Weekly Wage	s. d. 50 8	s. d. 51 11	s. d. 52 10	s. d. 50 0	s. d. 58 6	s. d. 51 8	s. d. 51 8
	Working Hours	.. 44.02	45.60	44.01	46.10	45.57	47.86	44.94
	Hourly Wage	.. 1/1½	1/1½	1/2½	1/1	1/3½	1/1	1/1½
31st Dec., 1927	Weekly Wage	s. d. 53 0	s. d. 52 7	s. d. 53 5	s. d. 49 11	s. d. 58 8	s. d. 52 7	s. d. 52 10
	Working Hours	.. 44.02	45.58	44.01	46.10	45.57	47.86	44.94
	Hourly Wage	.. 1/2½	1/1½	1/2½	1/1	1/3½	1/1½	1/2
31st Dec., 1928	Weekly Wage	s. d. 53 7	s. d. 53 9	s. d. 54 10	s. d. 50 11	s. d. 58 10	s. d. 53 4	s. d. 53 10
	Working Hours	.. 43.93	45.40	44.01	46.03	45.57	46.07	44.79
	Hourly Wage	.. 1/2½	1/2½	1/3	1/1½	1/3½	1/2	1/2½
31st Dec. 1929	Weekly Wage	s. d. 53 11	s. d. 54 1	s. d. 54 10	s. d. 51 4	s. d. 58 10	s. d. 53 9	s. d. 54 1
	Working Hours	.. 43.93	45.40	44.01	46.03	45.57	46.07	44.79
	Hourly Wage	.. 1/2½	1/2½	1/3	1/1½	1/3½	1/2	1/2½

(a) Weighted average weekly rate in all industrial groups combined. (b) Weighted average working hours per week, and computed hourly rates of wage for all industrial groups excepting Groups XI. (Shipping, etc.), and XII. (Agricultural, Pastoral, etc.). Working hours have not been generally regulated by industrial tribunals for occupations classified in industrial groups XI. and XII.

(iii) *Index-numbers.* The tendency in a majority of the States during the years 1924 to 1928 has been towards a slight reduction in hours of labour, particularly in Queensland and New South Wales, where a 44-hour week became operative on 1st July, 1925, and on 4th January, 1926, respectively. Further decreases were recorded in the hours of work per week for male employees during 1927 in all States excepting Queensland, where hours remained stationary. The decline in the other States was due mainly to the reduction of the standard hours of labour in Group II. (Engineering, etc.) from 48 to 44 hours per week, as awarded by the Commonwealth Court of Conciliation and Arbitration. The decline in the weekly hours in New South Wales, Victoria, South Australia, and Tasmania in 1928 was due mainly to the reduction of the standard hours of labour in Group V. (Books, Printing, etc.). During 1929 the hours of work per week for timber workers in certain States were increased by the Commonwealth Court, with the result that the weighted average hours for Australia were slightly increased. The effect

of these changes on the hourly rate of wage as compared with the general increase in the weekly wage is readily seen from the comparative index-numbers given in the following table :—

WEEKLY AND HOURLY WAGE INDEX-NUMBERS.—ADULT WORKERS, 1925 TO 1929.

NOTE.—Weighted average for Australia at 30th April, 1914, as base (= 1,000).

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Australia.
MALE WORKERS.								
31st Dec., 1925	Weekly Wage ..	1,741	1,763	1,813	1,712	1,760	1,695	1,755
	Hourly Wage (a) ..	1,808	1,823	1,988	1,761	1,827	1,723	1,829
31st Dec., 1926	Weekly Wage ..	1,821	1,805	1,815	1,735	1,791	1,721	1,802
	Hourly Wage (a) ..	1,944	1,864	1,997	1,776	1,878	1,746	1,900
31st Dec., 1927	Weekly Wage ..	1,848	1,819	1,816	1,753	1,792	1,703	1,817
	Hourly Wage (a) ..	1,980	1,880	1,998	1,800	1,882	1,731	1,920
31st Dec., 1928	Weekly Wage ..	1,860	1,808	1,835	1,745	1,805	1,692	1,821
	Hourly Wage (a) ..	2,004	1,867	2,001	1,788	1,916	1,728	1,928
31st Dec., 1929	Weekly Wage ..	1,866	1,834	1,836	1,763	1,825	1,718	1,835
	Hourly Wage (a) ..	2,011	1,895	2,001	1,808	1,923	1,751	1,940
FEMALE WORKERS.								
31st Dec., 1925	Weekly Wage ..	1,827	1,866	1,904	1,796	2,116	1,845	1,861
	Hourly Wage ..	1,944	2,000	2,125	1,913	2,280	1,893	1,995
31st Dec., 1926	Weekly Wage ..	1,865	1,911	1,944	1,839	2,152	1,902	1,902
	Hourly Wage ..	2,080	2,059	2,169	1,959	2,319	1,952	2,078
31st Dec., 1927	Weekly Wage ..	1,950	1,934	1,966	1,888	2,160	1,935	1,945
	Hourly Wage ..	2,175	2,084	2,193	1,958	2,327	1,985	2,125
31st Dec., 1928	Weekly Wage ..	1,973	1,979	2,017	1,875	2,164	1,964	1,980
	Hourly Wage ..	2,205	2,140	2,250	2,003	2,333	2,092	2,172
31st Dec., 1929	Weekly Wage ..	1,983	1,990	2,020	1,888	2,165	1,978	1,990
	Hourly Wage ..	2,218	2,154	2,252	2,015	2,333	2,108	2,182

(a) See footnote to following table.

4. Weighted Average Nominal Weekly Hours of Labour, Adult Males.—The following table shows the weighted average nominal hours of labour (exclusive of overtime) in a full working week for male workers in each State and Australia at the 31st December, 1925 to 1929.

HOURS OF LABOUR.—WEEKLY INDEX-NUMBERS, ADULT MALES, 1925 TO 1929.

NOTE.—Index-numbers based on the average hours of labour for Australia at the 30th April, 1914 (48.93) as base (= 1,000). The index-numbers in this table are comparable throughout. Overtime is excluded.

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Australia.
31st Dec., 1925	Weighted average weekly hours of labour (a) ..	46.76	46.98	43.88	46.97	46.26	47.25	46.44
	Index-numbers ..	956	960	897	960	945	966	949
31st Dec., 1926	Weighted average weekly hours of labour (a) ..	44.55	46.94	43.95	46.95	45.80	47.27	45.67
	Index-numbers ..	910	959	898	960	936	966	931
31st Dec., 1927	Weighted average weekly hours of labour (a) ..	44.44	46.82	43.96	46.78	45.75	47.16	45.46
	Index-numbers ..	908	957	898	956	935	964	929
31st Dec., 1928	Weighted average weekly hours of labour (a) ..	44.17	46.70	43.96	46.67	45.30	46.85	45.27
	Index-numbers ..	903	954	898	954	926	957	925
31st Dec., 1929	Weighted average weekly hours of labour (a) ..	44.14	46.83	43.96	46.83	45.58	47.09	45.34
	Index-numbers ..	902	957	898	957	932	962	927

(a) Weighted average working hours per week for all industrial groups excepting Groups XI. (Shipping), and XII. (Agricultural, Pastoral, etc.), in which working hours have not been generally regulated by industrial tribunals.

Each State, excepting New South Wales, shows a decrease for 1925, while, for 1926, four of the States show decreases, the remaining two, Queensland and Tasmania, showing minor increases on account of further industries being brought under Commonwealth Arbitration Court awards, under which the prescribed hours were greater than in the corresponding State awards. The weighted average weekly hours index-number for Australia at the 31st December, 1929, was 927, as compared with 1,000 at 30th April, 1914, a reduction of 7.3 per cent. The lowest weighted average nominal weekly hours index-number at the 31st December, 1929, was that for Queensland (898), followed in the order named by New South Wales (902), Western Australia (932), South Australia (957), Victoria (957), and Tasmania (962).

5. Nominal and Effective Wages, 1901 to 1929.—(i) *Nominal Weekly Wage Index-numbers—States.* The following table shows the progress in nominal weekly rates of wage for all industries in each State, the weighted average rate for Australia in 1911 being taken as the base (= 1,000). These results are based generally upon rates of wage prevailing in the capital city of each State, but in certain industries, such as mining, rates necessarily are taken for places other than the capital cities.

NOMINAL WAGE INDEX-NUMBERS, ADULT MALES, 1901 TO 1929.

(WEIGHTED AVERAGE WAGE FOR AUSTRALIA IN 1911 = 1,000.)

States.	Number of Occupations included.		1901.	1911.	1914.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
	1901 to 1912.	1913 to 1929.												
New South Wales ..	158	874	858	1,003	1,096	1,869	1,785	1,844	1,824	1,873	1,959	1,988	2,001	2,007
Victoria ..	150	909	796	985	1,065	1,826	1,783	1,865	1,862	1,897	1,941	1,957	1,944	1,972
Queensland ..	87	627	901	997	1,042	1,886	1,830	1,837	1,868	1,950	1,952	1,953	1,974	1,975
South Australia ..	134	567	819	1,013	1,062	1,745	1,708	1,770	1,791	1,841	1,867	1,885	1,877	1,896
Western Australia ..	69	489	1,052	1,152	1,226	1,853	1,829	1,838	1,847	1,893	1,927	1,928	1,941	1,963
Tasmania ..	54	482	719	799	1,028	1,788	1,726	1,802	1,805	1,823	1,851	1,832	1,820	1,848
Australia (a) ..	652	3,948	848	1,000	1,085	1,844	1,785	1,840	1,839	1,887	1,938	1,955	1,959	1,974

(a) Weighted average.

NOTE.—The figures in the above table are comparable both horizontally and vertically.

During the period 1911 to the end of the year 1929 the average weekly rate of wage increased in New South Wales and Victoria, 100 per cent., in Queensland, 98 per cent., in South Australia, 87 per cent., in Western Australia, 70 per cent., and in Tasmania 131 per cent., while the weighted average weekly rate for Australia increased 97 per cent.

(ii) *Effective Weekly Wage Index-numbers—States.* In comparing wages, two elements are of obvious importance, viz., (i) hours worked per day or week, and (ii) the cost of commodities and housing. Thus 60s. per week of 60 hours represents the same hourly rate as 48s. per week for 48 hours. Similarly, if the cost of commodities and housing increases 25 per cent., e.g., if the prices index-number rises from 1,000 to 1,250, then 60s. per week (the index-number being 1,250) is effectively equal only to 48s. (when the index-number was 1,000). Or, again, if the prices index-number falls from 1,000 to 750, then 60s. per week, when the index-number is 750, would have the same purchasing power as 80s. when the index-number was 1,000. Ignoring for the present the number of hours worked, and assuming that the real value of the average wages is to be measured by their purchasing power, the actual average wages paid may be reduced to their effective value by applying the prices index-numbers to the nominal wages index-numbers. The following table shows the effective wage index-numbers so ascertained in each State for each of the years indicated from 1901 to 1929.

In computing these effective wage index-numbers for years prior to 1914, the nominal wage index-numbers given in the preceding table have been divided by the price index-numbers in Section A, §2. The resulting index-numbers show for each State and for Australia for the years specified the variations in effective wages. The nominal wage index-numbers for these earlier years are based on rates of wage current at the end of December, the only data available. For the years 1914 onward, however, the nominal wage index-numbers used are based on the average wage for the four quarters in each year, and in this respect differ from those in the preceding sub-sections. However, so far as the years 1901 and 1911 are concerned, as the movement in wages during any one year prior to 1914 was very slight, it is possible that if the wage data were available in quarters, the index-numbers used would approximate very closely to those based on averages for the year.

EFFECTIVE WEEKLY WAGE INDEX-NUMBERS.—ADULT MALES, 1901 TO 1929.^(a)

States.	1901.	1911.	1914.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
New South Wales ..	961	973	906	1,079	1,113	1,040	1,069	1,048	1,035	1,079	1,089	1,050
Victoria ..	915	1,037	961	1,038	1,102	1,036	1,097	1,073	1,069	1,095	1,120	1,084
Queensland ..	1,172	1,090	1,038	1,244	1,273	1,214	1,232	1,241	1,183	1,222	1,236	1,220
South Australia ..	948	957	929	1,027	1,090	1,036	1,051	1,053	1,076	1,073	1,089	1,067
Western Australia ..	1,024	1,023	1,070	1,139	1,226	1,192	1,161	1,162	1,165	1,199	1,156	1,143
Tasmania ..	827	838	942	977	1,053	1,000	1,017	1,044	1,037	1,072	1,099	1,064
Australia (b) ..	964	1,000	948	1,076	1,126	1,062	1,095	1,081	1,072	1,102	1,115	1,082

(a) As to the effect in abnormal periods, see Labour Report No. 6, pp. 20-2, Section IV., par. 3.

(b) Weighted average.

In the table above the effective wage index-numbers are computed to the one base, that of Australia for 1911. Subject to the qualification already referred to, which, as has been pointed out, does not materially affect the figures, the index-numbers are comparable in all respects, and comparisons may be made as to the increase or decrease in the effective wage index-number for any State over a period of years. Thus, comparing 1929 with 1901, and also with 1911, there has been an increase in the effective wage in all States.

(iii) *Effective Wages and Standard of Comfort.* In the preceding table particulars are given as to variations in effective wages in each State, due allowance having been made for variations in retail prices of commodities, though not for unemployment.

For years prior to 1913 the data available as to unemployment are so meagre that comparative results allowing for variations both in prices of commodities and in unemployment cannot be accurately computed for the several States. In the next table, for these earlier years the percentage of unemployment in Australia and the nominal wage index-numbers relate to the end of the year. For 1914 and subsequent years the wages index-numbers, percentages of unemployment, and retail prices index-numbers are the average for the year. Column I. shows the nominal wage index-numbers, and Column II. the relative percentages unemployed. Applying these percentages to the numbers shown in Column I., and deducting the results from each corresponding index-number to allow for relative loss of time, the figures in Column III. are obtained. These figures are then re-computed with the year 1911 as base, and are shown in Column IV. In Column V. the retail prices index-numbers are shown, and in Columns VI. and VII. the effective wage index-numbers are given, firstly, for full work, and secondly, allowing for lost time. These are obtained by dividing the figures in Columns I. and IV. respectively by the corresponding figure in Column V. The resulting index-numbers show for Australia for the years specified the variations in effective wages, or in what may be called the "standard of comfort."*

* This expression must not be confused with "standard of living." A change in the standard of living necessarily involves a change in regimen (see Labour Report No. 4), that is, a change in the nature or in the relative quantity of commodities purchased, or both. A change in the "standard of comfort" merely implies a variation in effective wages, which variation may, or may not, result in, or be accompanied by, a change in the "standard of living."

A comparison between the figures in Columns I. and VI. gives the relation between the nominal rates of wage and the purchasing efficiency of these rates. The figures in Column VII. show variations in effective wages after allowing not only for variations in purchasing power of money, but for the relative extent of unemployment also.

WAGE INDEX-NUMBERS, NOMINAL AND EFFECTIVE, 1901 TO 1929.(a)

Year.	I. Nominal Wage Index- Numbers.	II. Percentage Unem- ployed.	Rate of Wage Index- Numbers, Allowing for Lost Time.		V. Retail Price Index- Numbers.	Effective Wage Index-Numbers.	
			III. Actual.	IV. Re-com- puted. (1911 =1,000).		VI. Full Work.	VII. Allowing for Unemploy- ment.
1901 ..	848	6.6	793	832	880	964	945
1906 ..	866	6.7	808	848	902	960	940
1907 ..	893	5.7	842	884	897	996	986
1908 ..	900	6.0	846	888	951	946	934
1909 ..	923	5.8	870	913	948	974	963
1910 ..	955	5.6	901	945	970	985	974
1911 ..	1,000	4.7	953	1,000	1,000	1,000	1,000
1912 ..	1,051	5.5	993	1,042	1,101	955	946
1913 ..	1,076	5.3	1,021	1,071	1,104	975	970
1914 ..	1,081	8.3	991	1,040	1,140	948	912
1915 ..	1,092	9.3	990	1,039	1,278	854	813
1916 ..	1,144	5.8	1,078	1,131	1,324	864	854
1917 ..	1,226	7.1	1,139	1,195	1,318	930	907
1918 ..	1,270	5.8	1,196	1,255	1,362	932	921
1919 ..	1,370	6.6	1,280	1,343	1,510	907	889
1920 ..	1,627	6.5	1,521	1,596	1,785	911	894
1921 ..	1,826	11.2	1,621	1,701	1,697	1,076	1,002
1922 ..	1,801	9.3	1,634	1,715	1,600	1,126	1,072
1923 ..	1,805	7.1	1,677	1,760	1,700	1,062	1,035
1924 ..	1,840	8.9	1,676	1,759	1,681	1,095	1,046
1925 ..	1,861	8.8	1,697	1,781	1,722	1,081	1,034
1926 ..	1,914	7.1	1,778	1,866	1,786	1,072	1,045
1927 ..	1,946	7.0	1,810	1,899	1,766	1,102	1,075
1928 ..	1,963	10.8	1,751	1,837	1,760	1,115	1,044
1929 ..	1,972	11.1	1,753	1,839	1,822	1,082	1,009

(a) As to the effect in abnormal periods, see Section IV., par. 3, of Labour Report No. 6.

NOTE.—For years prior to 1914, the nominal wage index-numbers and the percentage unemployed relate to the end of the year only, but from 1914 onward these figures, in addition to those for retail prices, are averages for the whole year.

Compared with 1911 the effective wage in 1901 was 3.6 per cent. less for full work, and 5.5 per cent. less after allowance for unemployment. In connexion with the index-numbers in Column VII., unemployment was less in 1911—the base year—than in any other year. During the period 1912 to 1920, while wages increased steadily, prices increased at a greater rate, with the result that the purchasing power of wages was less in each of these years than in 1911, the lowest point reached being in 1915, when the full time index-number was 14.6 per cent. less, or, allowing for unemployment, 18.7 per cent. less than for the base year. The first occasion on which the effective wage was higher than in 1911 was in 1921, when wages increased considerably while prices declined, the increase in effective wages being 7.6 per cent., but only 0.2 per cent. allowing for unemployment. Unemployment reached its "peak" during 1921. Effective wages for full work were highest in the year 1922. Allowing for unemployment the effective wage index-number for 1927 was 1,075, the highest recorded during the period under review.

There was a rise in the effective wage index-number for full work during the year 1928. Unemployment, however, increased, and the effective wage index-number, after allowing for unemployment, declined to 1044. The increase in prices during 1929 was greater than the increase in the nominal wages, with the result that the effective wage index-number declined from 1115 to 1082, and as unemployment increased also during the year the index-number allowing for unemployment declined sharply from 1044 to 1009, the lowest point recorded since 1921. Comparison with 1911 shows that the effective wage for full time work was 8.2 per cent., and allowing for unemployment, 0.9 per cent. higher during 1929.

§ 3. The Basic Wage and Child Endowment in Australia.

1. **The Basic Wage.**—(i) *General.* The “basic wage” in Australia is understood to mean the lowest wage which can be paid to an unskilled labourer on the basis of “the normal needs of an average employee regarded as a human being living in a civilized community.”* This wage is fixed by various industrial tribunals in Australia operating under Federal and State Arbitration Acts, and is varied from time to time according to changes in cost of living, constitution of the family unit, etc. In addition to the “basic” wage, these tribunals also determine what is known as the “secondary” wage—“the extra payment to be made for trained skill or other exceptional qualities necessary for an employee exercising the functions required.”†

(ii) *History in Australia.* The doctrine of a basic wage was propounded as far back as 1890 by Sir Samuel Griffith, Premier of Queensland, and the same principle was enunciated in the New South Wales Arbitration Court in somewhat similar terms by Mr. Justice Heydon in 1905. In spite, however, of these pronouncements and the fact that wage-fixing tribunals had been in operation as early as 1896 (in the State of Victoria) it was not until the year 1907 that the first basic wage, as such, was declared by a Court in Australia. This declaration was made by Mr. Justice Higgins, President of the Commonwealth Court of Conciliation and Arbitration, and is popularly known as the “Harvester Judgment” on account of its having been determined in connexion with H. V. McKay’s Sunshine Harvester Works. The rate of wage declared in this case was 7s. per diem or £2 2s. per week for Melbourne, the amount considered reasonable for “a family of about five.” The constituent parts of this amount were £1 5s. 7d. for food, 7s. for rent, and 9s. 5d. for all other expenditure.

The above rate has been varied from time to time in accordance with the retail price index-numbers (food, groceries and rent (all houses)) prepared by the Commonwealth Bureau of Census and Statistics for the city or town in which the persons affected are employed. The present weekly wage rates (at 1st August, 1930) for the various capital cities as so varied are as follows:—

	£	s.	d.
Sydney (a)	4	11	0
Melbourne	4	5	6
Brisbane (a)	3	13	0
Adelaide (a)	4	2	6
Perth (a)	4	2	0
Hobart	4	4	0
Six Capitals (Weighted Average)	4	6	0

(a) The basic rates of wage determined by State industrial tribunals for these cities are given on the next page.

The above amounts include the sum of 3s. per week known as the “Powers” three shillings, which was added in 1921 for the purpose of securing to the worker during a period of rising prices the full equivalent of the “Harvester” standard.

The adequacy or otherwise of the amount allotted under the “Harvester” judgment has been the subject of much discussion, the author of the judgment himself urging on several subsequent occasions the need for its review. The dislocation due to the war, however, placed such an inquiry out of the question. Whatever its limitations, the Harvester judgment proved a great boon during the war years by providing a basis for variation according to changes in cost of living and a foundation upon which “margins for skill” could be imposed.

(iii) *State Basic Wage Rates in Operation.* The basic wage rates fixed by State arbitration tribunals vary from those obtaining in the Federal sphere not only as regards amount, but also in respect of constitution of family unit whose needs it purports to supply.

* Mr. Justice Higgins—*A New Province for Law and Order.* † *Ibid.*

The awards of various State tribunals in operation at the present moment are shown in the following statement. The Industrial Commission in New South Wales and the Industrial Court in Western Australia revised the living or basic rates of wage to be paid in the respective States during 1929. Particulars of these judgments are given in Labour Report, No. 20. The pronouncements of the Industrial Commission in New South Wales are published in the *New South Wales Industrial Gazette*, Vol. XXXVI., No. 6, and deal exhaustively with matters relating to basic wages. The declaration and reasons for the judgment of the Industrial Court in Western Australia are published in the *Western Australian Industrial Gazette*, Vol. IX., No. 2, for quarter ended 30th June, 1929. A further revision of the "basic" wage in this State was made in June, 1930. The industrial tribunals in Queensland and South Australia made no alteration during 1929 in the basic rates of wage previously declared. The Industrial Court in Queensland reviewed the basic rates of wage for that State during 1930, and reduced the rate for adult males from 85s. to 80s. per week as from 1st August, 1930.

State.	Basic Wage.		Date of Operation.	Family Unit (for Male Rate).
	Males.	Females.		
	£ s. d.	£ s. d.		
New South Wales ..	(a) 4 2 6	2 4 6	20.12.29	Man, wife and child
Victoria ..	(b)	(b)	(b)	(b)
Queensland ..	4 0 0	2 1 0	1.8.30	Man, wife and three children
South Australia ..	4 5 6	1 19 6	1.7.25	(c)
Western Australia ..	(d) 4 6 0	2 6 5	1.7.30	(c)
Tasmania ..	(b)	(b)	(b)	(b)

(a) Plus child allowances.

(b) None declared, but follow Federal rates to large extent.

(c) Although the family unit is not specifically defined in the legislation of these States, the tribunals appointed to determine the basic wage have adopted the unit of man, wife, and two children.

(d) Basic wage for country districts—Males, £4 5s.; females, £2 5s. 11d.

(iv) *Royal Commission on the Basic Wage, 1920.*—The Federal basic wage referred to in (ii) *ante* was made operative in other parts of Australia on the basis of the relative retail price index-numbers applicable to the locality, but only one comprehensive attempt has been made by the Federal authorities to ascertain specifically what the actual requirements were in the various States according to reasonable standards of comfort, including all matters comprised in the ordinary expenditure of a household in respect of a family consisting of a man, wife and three children under fourteen years of age.

The attempt referred to was made by a Royal Commission, and its report, issued in 1920, recommended the following amounts for the various capital cities, viz.:—

	£ s. d.
Sydney ..	5 17 1
Melbourne ..	5 16 6
Brisbane ..	5 6 2
Adelaide ..	5 16 1
Perth ..	5 13 11
Hobart ..	5 16 11
Six Capitals (Weighted Average) ..	5 15 8

The recommendations of this Commission were not given effect to owing to the marked advance of the amounts suggested over ruling rates* and the grave doubts expressed as to the ability of industry to pay such rates.

2. *Child Endowment.*—(i) *General.* The principle of supplementing wages by a payment in respect of dependent children under fourteen years of age has become very prominent in Australia in recent years, and is actually in operation in certain instances. The system has been in force in various forms in England and on the Continent as far back as 1795, the first instance occurring in England in that year.†

* The "Harvester" equivalent for Melbourne at the time (September quarter, 1920) was £4 13s. per week, but only £3 13s. to £4 2s. was being paid on the basis of an annual index-number.

† A complete survey of the systems in force in various countries is contained in Elinor Rathbone's *Disinherited Family: A Plea for the Endowment of the Family*.

(ii) *The New South Wales Scheme.* The earliest attempt made in Australia to institute the system was in New South Wales in 1919, when a Bill was introduced into the State Parliament to provide a flat basic wage for a man and wife, and an allowance of 5s. per week for each child, the latter rate to be reduced on a sliding scale and to cease automatically when the income reached an amount of £3 per week above the basic wage. The Bill was rejected, and the matter dropped until the Session of 1926–27, when measures providing for the payment of child allowances became law.* These measures provided for (a) the declaration of a basic wage for a man and wife,† and (b) the payment of an allowance of 5s. per week in respect of each dependent child, subject to the provision that child allowances would be paid only to the extent by which the total earnings of the worker and his family fall short of the sum represented by the *basic wage* plus child allowance at the rate of 5s. per week for each child under the age of fourteen years. Thus a worker with three dependent children receiving £5 by way of wages would not be entitled to the allowance, but would receive it in respect of a fourth child. These payments in New South Wales commenced to operate from 1st September, 1927. An amending Act, assented to on the 23rd December, 1929, provides that child endowment shall be 5s. per week for each child under the age of fourteen years except one in the family. The basic or living wage for adult male workers was determined by the Industrial Commission on the 20th December, 1929, at £4 2s. 6d. per week for a family unit consisting of a man, wife and one child. The fund from which child endowment payments are made is created by a levy on the wages bill of employers. The rate of tax to be collected by the Government from employers during the year, 1930, was fixed at 1 per cent.

(iii) *Commonwealth Public Service.* The first payment of child endowment allowances in Australia was in connexion with the Commonwealth Public Service. From 1st November, 1920, child endowment at the rate of 5s. per week for each dependent child under fourteen years of age was paid to officers, with a limitation of salary plus allowance. Details regarding the introduction and method of calculating the payments under this scheme have been published in previous issues of the Official Year-Book and will be found also in the Labour Reports issued by this Bureau.

(iv) *National Scheme.* The Federal Government, in June, 1927, called a conference at Melbourne of the Premiers of the several States to consider the question from a national standpoint. The Prime Minister submitted various estimates of cost of endowing dependent children under fourteen years of age in Australia at 5s. per week. After discussion, it was decided to refer the matter to a Royal Commission, to be appointed by the Commonwealth Government.

The Commission was not unanimous in its findings, and the opinions and recommendations of the members were embodied in two separate reports, which dealt exhaustively with the constitutional aspects, existing systems, industrial legislation, the basic wage, standard of living, regulation of wages, working conditions and cognate matters.

At the conference of Commonwealth and State Ministers held at Canberra during May, 1929, the Prime Minister stated that the Commission had submitted its report. The minority report recommended a scheme of child endowment financed entirely from the proceeds of taxation. For reasons stated to the Conference the Government was not prepared to adopt this scheme. The Commonwealth Government agreed with the majority of the Commission that child endowment could not be separated from the control of the basic wage—a power which the Commonwealth did not possess and which the States were not prepared to relinquish to the Commonwealth. The Government therefore did not propose to establish any system of child endowment. It was generally agreed that any scheme which would increase the charges upon industry would be unwise at the present time. The result of the discussion was that it was agreed that the matter of child endowment was one to be dealt with as the State Governments should think proper.

The findings and recommendations in the *majority* and *minority* reports are given in Labour Report, No. 19.

* *Family Endowment Act 1927*; *Finance (Family Endowment Tax) Act 1927*; *Industrial Arbitration (Living Wage Declaration) Act 1927* and subsequent amendments.

† This was subsequently declared at £4 5s. per week for adult males and £2 6s. per week for adult females. A separate rate for rural employees was declared later at £4 4s. per week.

§ 4. Changes in Rates of Wage.

1. *General*.—A change in rate of wages is defined as a change in the weekly rates of remuneration of a certain class of employees, apart from any change in the nature of the work performed and apart from any revision of rates due to increased length of service or experience. It is obvious that under this definition certain classes of changes are excluded, such, for example, as (a) changes in rates of pay due to promotion, progressive increments, or, on the other hand, to reduction in pay or grade to inefficient workers, and (b) changes in average earnings in an occupation due to a change in the proportions which more highly-paid classes of workers bear to those paid at lower rates.

There is a certain amount of overstatement as regards "persons affected," since in the quarterly adjustments of wages the same persons may figure on four occasions. The difficulty of eliminating this factor, has, however, been found too great to justify the labour involved. A further complication also arises from the overlapping of Commonwealth and State awards. On account of this overlapping of awards and determinations it is difficult to ascertain definitely the number of workpeople affected by the changes in rates of wage brought about by Commonwealth and State awards, etc. In Victoria there are over 70 trades for which Wages Boards have issued determinations, such trades being wholly or partly covered by Commonwealth awards or agreements. Similar conditions prevail, to a greater or less extent, in other States. In many instances forms issued to officials of employers' associations and trade unions are returned with remarks to the effect that the desired particulars are not known so far as the number of workpeople affected are concerned. The tables contain particulars of all changes regarding which data can be ascertained by inquiry or by investigation of factory reports, trade union membership, census results, etc.

2. *Effect of Changes*.—(i) *General*. The following tables give particulars of changes which occurred in each State during the years specified. As regards the number of persons affected, the figures refer to the total number of persons ordinarily engaged in the various industries, and the results of the amount of increase in wages are computed for a full week's work for all persons ordinarily engaged in the several industries and occupations affected. In cases of changes in existing minimum rates under awards or determinations of industrial tribunals, it has been assumed (in the absence of any definite information to the contrary) that the whole of the employees in each occupation received the minimum rates of wage before and after the change.

Changes brought about by awards and agreements under the Commonwealth Conciliation and Arbitration Act, the Arbitration (Public Service) Act, and the Industrial Peace Act 1920, are necessarily included hereunder as changes in each State to which such awards and agreements apply. The average increase per head per week is computed to the nearest penny.

(ii) *Summary—States, 1929*. The following table gives particulars of the changes in rates of wage in each State during the year 1929.

CHANGES IN RATES OF WAGE.—EFFECT IN EACH STATE, 1929.

State.	INCREASES.		DECREASES.		TOTAL RESULT OF ALL CHANGES.		
	Work-people Affected.	Increase per Week.	Work-people Affected.	Decrease per Week.	Work-people Affected.	Net Increase per Week.	Average Increase per Week.
		£		£		£	s. d.
New South Wales ..	141,205	21,625	293,829	31,042	435,034	b 9,417	b 0 5
Victoria ..	168,667	19,020	48,990	2,475	217,657	17,445	1 7
Queensland ..	7,176	694	180	9	7,356	685	1 10
South Australia ..	51,562	6,243	26,108	1,444	77,670	4,799	1 3
Western Australia ..	18,104	2,093	3,155	236	21,259	1,857	1 9
Tasmania ..	14,342	1,541	3,904	174	18,246	1,367	1 6
Northern Territory ..	..	..	..	..	..	..	..
Federal Capital Territory ..	57	14	..	..	57	14	4 11
Common to all States (a)	13,010	2,042	..	..	13,010	2,042	8 2
Total ..	414,123	54,172	376,166	35,380	790,289	18,792	0 6

(a) See footnote (a) on next page.

(b) Decrease.

The preceding figures for changes in wages include all those which have occurred either through the operations of wage tribunals or as the result of direct negotiations between employers and employees. Many workers in all States come under the jurisdiction of awards made by the Commonwealth Arbitration Court. The principle of quarterly adjustments adopted by that Court caused a large number of variations in rates of wage in all States during the year, but as the retail price index-numbers used in the quarterly and half-yearly adjustments remained fairly constant during 1929, changes in rates on account of the increase or decrease in the cost of commodities were not numerous during the second half of the year.

(iii) *Australia, 1925 to 1929.* The following tables give separate particulars of the effect of increases and decreases in rates of wage in Australia during the years 1925 to 1929 :—

CHANGES IN RATES OF WAGE.—EFFECT IN AUSTRALIA, 1925 TO 1929.

Year.	INCREASES.		DECREASES.		TOTAL RESULT OF ALL CHANGES.		
	Work-people Affected.	Increase per Week.	Work-people Affected.	Decrease per Week.	Work-people Affected.	Net Increase per Week.	Average Increase per Head per Week.
		£		£		£	s. d.
1925	1,124,095	130,220	138,114	10,793	1,262,209	119,427	1 11
1926	951,490	117,814	270,270	30,194	1,221,760	87,620	1 4
1927	771,939	78,721	492,053	25,723	1,263,992	52,998	0 10
1928	305,694	28,170	529,282	36,910	834,976	68,740	0 3
1929	414,123	54,172	376,166	35,380	790,289	18,792	0 6

CHANGES IN RATES OF WAGE.—EFFECT, STATES, 1925 TO 1929.

Particulars.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N.T.	F.C.T.	(a) All States.	Aust.
No. of Persons Affected	1925	514,123	343,123	184,595	113,721	40,152	18,566	26	243	47,660	1,262,209
	1926	525,801	429,605	32,953	103,291	38,271	25,378	53	63	66,345	1,221,760
	1927	642,347	403,154	9,252	109,772	18,678	27,359	448	261	52,721	1,263,992
	1928	346,670	301,071	14,700	87,502	16,652	22,639	170	51	45,521	834,976
	1929	435,034	217,657	7,356	77,670	21,259	18,246	..	57	13,010	790,289
Total Net Amount of Increase per Week		£	£	£	£	£	£	£	£	£	£
	1925	40,780	19,968	43,975	9,693	3,199	293	69	133	1,395	119,427
	1926	43,471	27,920	5,081	4,597	4,164	748	20	11	1,608	87,620
	1927	38,611	8,941	1,070	4,258	1,188	61,026	107	41	6192	52,998
	1928	6,678	613,698	908	63,095	728	631	43	5	6278	68,740
	1929	6 9,417	17,445	685	4,799	1,857	1,367	..	14	2,042	18,792
Average Increase per Head per Week		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	1925	1 7	1 2	4 9	1 8	1 7	0 4	6 11	10 11	0 7	1 11
	1926	1 8	1 4	3 1	0 11	2 2	0 7	7 7	3 6	0 6	1 4
	1927	1 3	0 5	2 4	0 9	1 3	60 9	4 9	3 2	60 1	0 10
	1928	0 5	60 11	1 3	60 8	0 10	..	5 1	2 0	60 1	60 3
	1929	60 5	1 7	1 10	1 8	1 9	1 6	..	4 11	3 2	0 6

(a) Changes recorded in this column are common to all States, as the particulars relating to the number of workpeople affected and the net amount of increase per week in each State were not ascertainable. (b) Decrease.

The relative positions of the States in regard to the number of workers affected in each year naturally depend largely on the magnitude of the different industries and callings in which changes took place.

(iv) *Industrial Groups—Australia.* Workpeople affected by Changes. In the following table particulars are given regarding the number of persons (males and females) affected, and the total amount of increase per week, classified according to Industrial Groups throughout Australia during the years 1925 to 1929 :—

CHANGES IN RATES OF WAGE.—INDUSTRIAL GROUPS, AUSTRALIA,
1925 TO 1929.

Particulars.	Industrial Groups.							
	I. Wood, Furniture, Timber, etc.	II. Engineering, Metal Works, etc.	III. Food, Drink, Tobacco, etc.	IV. Clothing, Hats, Boots, etc.	V. Books, Printing, etc.	VI. Other Manufacturing.	VII. Building.	VIII. Mines, Quarries, etc.
1925.								
Number of Persons affected	95,720	123,669	68,596	40,202	16,224	115,692	121,540	31,373
Amount of Increase per week	£ 7,905	9,500	7,609	1,444	1,128	8,407	10,149	4,108
1926.								
Number of Persons affected	60,422	96,677	43,416	98,659	21,157	92,324	132,012	57,650
Amount of Increase per week	£ 1,669	850	4,180	5,334	2,513	4,231	14,848	8,123
1927.								
Number of Persons affected	30,217	142,440	50,680	164,207	18,800	109,938	98,307	30,440
Amount of Increase per week	£ 657	5,451	3,835	4,468	1,070	3,626	3,194	1,348
1928.								
Number of Persons affected	13,204	131,047	24,331	49,525	15,887	70,117	107,755	19,535
Amount of Increase per week	£ 253	2,352	2,511	4,108	622	2,369	24,684	2,252
1929.								
Number of Persons affected	26,252	103,124	35,609	78,466	25,383	65,407	76,836	19,920
Amount of Increase per week	£ 21,057	2,780	462	884	1,038	1,026	2,996	1,289

Particulars.	Industrial Groups—continued.						
	IX. Rail and Tram Services.	X. Other Land Transport.	XI. Shipping, etc.	XII. Pastoral, Agricultural, etc.	XIII. Domestic, Hotels, etc.	XIV. Miscellaneous.	ALL GROUPS.
1925.							
Number of Persons affected	188,752	27,249	77,285	55,495	37,472	262,931	1,262,209
Amount of Increase per week	£ 18,196	3,435	5,656	10,577	4,239	27,074	119,427
1926.							
Number of Persons affected	283,101	27,019	90,685	13,160	1,066	204,412	1,221,760
Amount of Increase per week	£ 20,227	2,404	2,416	552	369	19,504	87,620
1927.							
Number of Persons affected	242,994	28,945	72,802	45,985	20,101	208,136	1,263,992
Amount of Increase per week	£ 4,821	2,346	2,218	5,315	3,083	14,002	52,998
1928.							
Number of Persons affected	199,394	17,362	67,379	5,121	358	113,961	834,976
Amount of Increase per week	£ 23,468	21,128	2,63	2,240	36	1,308	28,740
1929.							
Number of Persons affected	157,468	10,014	28,729	5,493	21,212	136,376	790,289
Amount of Increase per week	£ 6,883	544	4,096	536	22,274	2,361	18,792

(a) Decrease.

3. Methods by which Changes were Effected, and Results, 1925 to 1929.—So far as possible, the effect of awards or agreements is recorded in the figures for the year in which such awards or agreements are made and filed. In certain cases, however, the awards or agreements are made retrospective as to the date on which the altered rate of wage has to be paid, and in others the particulars as to the number of workpeople affected and the effect of the change are not ascertainable in time for inclusion in the tabulations for the year in which the change occurred.

CHANGES IN RATES OF WAGE.—METHODS AND RESULTS, AUSTRALIA, 1925 TO 1929.

Particulars.	By Direct Negotiations.	By Negotiation, Intervention or Assistance of Third Party.	By Award of Court under C'wealth Act.	By Agreement Registered under C'wealth Act.	By Award or Determination under State Act.	By Agreement Registered under State Act.	By other Means.	TOTAL.
1925.								
Number of Workpeople affected	15,110	23,317	581,306	64,849	547,986	29,641	..	1,262,209
Amount of Increase per week £	1,880	1,959	29,996	4,524	80,322	746	..	119,427
1926.								
Number of Workpeople affected	44,289	40,136	893,344	69,555	140,468	16,000	17,968	1,221,760
Amount of Increase per week £	3,460	5,084	41,598	5,785	27,976	2,521	1,196	87,620
1927.								
Number of Workpeople affected	15,272	12,256	803,446	53,289	369,827	9,902	..	1,263,992
Amount of Increase per week £	204	1,467	12,447	816	36,502	2,562	..	52,998
1928.								
Number of Workpeople affected	12,721	25,756	693,814	60,600	38,409	3,649	27	834,976
Amount of Increase per week £	α 87	2,996	α12,280	α1,436	843	1,214	10	α 8,740
1929.								
Number of Workpeople affected	10,111	5,466	461,848	22,644	283,578	6,642	..	790,289
Amount of Increase per week £	967	790	40,350	1,493	α 25,121	313	..	18,792

(α) Decrease.

C.—EMPLOYMENT.

§ 1. Industrial Disputes.

1. **General.**—Information with regard to the collection of particulars and methods of tabulation of industrial disputes involving stoppage of work has appeared in previous issues of the Year Book, and is also given in the annual Reports of the Labour and Industrial Branch of this Bureau.

In *annual** tabulations, particulars are included of all disputes which either *commenced* or were *current* during the year under review. As regards "number of disputes," and "number of establishments involved," therefore, duplication will take place in respect of those disputes which started in and were unsettled at the end of a preceding year; the number involved will, however, be indicated in a footnote, to permit of due allowance being made in any calculations made from the tables.

2. **Industrial Disputes Involving Stoppage of Work, Classified in Industrial Groups, 1929.^(a)**—The following tables give particulars of industrial disputes which either commenced or were current during the year 1929, classified according to industrial groups. Similar information for the years 1913 to 1928 was published in previous issues of the Year Book and in Labour Reports Nos. 5 to 19..

(a) Four disputes in New South Wales (involving 8 establishments and 672 workers); and one in Tasmania (1 establishment and 90 workers) commenced in 1928 and were uncompleted at the end of that year, and in respect of number of disputes, number of establishments and workpeople involved are duplicated in the figures for 1929.

* In respect of years prior to 1922, the figures include complete particulars of industrial disputes which commenced during any calendar year; and where any such dispute extended into a subsequent year, the relative figures were also incorporated in those for the year in which the dispute commenced.

INDUSTRIAL DISPUTES CLASSIFIED ACCORDING TO INDUSTRIAL GROUPS, 1929.

Class.	Industrial Group.	No. of Disputes.	No. of Estab. In-volved.	No. of Workpeople Involved.			No. of Working Days Lost.	Estimated Loss in Wages.
				Directly.	In-directly.	Total.		
NEW SOUTH WALES.								
								£
I.	Wood, saw-mill, timber, etc. . .	8	178	4,541	800	5,341	603,527	555,769
II.	Engineering, metal works, etc. . .	10	10	655	102	757	4,357	4,475
III.	Food, drink, etc. . .	3	17	89	210	299	628	532
IV.	Clothing, hats, boots, etc. . .	1	1	20	..	20	20	10
VI.	Other manufacturing . . .	1	1	16	5	21	378	361
VII.	Building . . .	6	10	186	468	654	2,760	3,114
VIII.	Mines, quarries, etc. . .	194	277	69,727	1,835	71,562	2,713,186	3,122,377
IX.	Railway and tramway services . .	5	11	265	701	966	28,399	31,957
X.	Other land transport . . .	2	2	190	18	208	1,600	1,735
XI.	Shipping, wharf labour, etc. . .	1	1	91	..	91	91	168
XIII.	Domestic, hotels, etc. . .	1	1	6	..	6	18	17
XIV.	Miscellaneous . . .	4	4	211	13	224	1,074	897
	Total . . .	231	513	75,997	4,152	80,149	3,356,038	3,721,412
VICTORIA.								
I.	Wood, saw-mill, timber, etc. . .	2	311	5,038	12,600	17,638	1,275,512	1,109,681
III.	Food, drink, etc. . .	1	1	18	19	37	222	160
IV.	Clothing, hats, boots, etc. . .	3	3	230	100	330	1,265	643
VIII.	Mines, quarries, etc. . .	4	4	3,567	..	3,567	19,657	20,070
XIII.	Domestic, hotels, etc. . .	1	1	40	..	40	20	11
	Total . . .	11	320	8,893	12,719	21,612	1,296,676	1,180,565
QUEENSLAND.								
VII.	Building . . .	1	18	70	..	70	1,680	1,932
VIII.	Mines, quarries, etc. . .	3	5	1,621	8	1,629	1,763	1,447
	Total . . .	4	23	1,691	8	1,699	3,443	3,379
SOUTH AUSTRALIA.								
I.	Wood, saw-mill, timber, etc. . .	1	20	524	40	564	9,024	7,896
VII.	Building . . .	1	1	8	..	8	16	14
	Total . . .	2	21	532	40	572	9,040	7,910
WESTERN AUSTRALIA.								
I.	Wood, sawmill, timber, etc. . .	1	1	140	30	170	510	440
V.	Books, printing, binding, etc. . .	1	1	5	..	5	208	300
VIII.	Mines, quarries, etc. . .	1	5	626	..	626	1,878	1,972
XIV.	Miscellaneous . . .	1	1	56	20	76	76	59
	Total . . .	4	8	827	50	877	2,672	2,771
TASMANIA.								
III.	Food, drink, etc. . .	1	35	10	..	10	10	12
IV.	Clothing, hats, boots, etc. . .	1	1	172	..	172	430	350
VIII.	Mines, quarries, etc. . .	2	2	132	50	182	1,292	1,225
IX.	Railway and tramway services . .	1	1	13	8	21	147	111
XIV.	Miscellaneous . . .	1	1	6	84	90	1,530	1,370
	Total . . .	6	40	333	142	475	3,409	3,068
FED. CAP. TERRITORY.								
XII.	Pastoral, agricultural, etc. . .	1	1	20	..	20	200	200
	Total . . .	1	1	20	..	20	200	200
AUSTRALIA.								
I.	Wood, sawmill, timber, etc. . .	7	510	10,243	13,470	23,713	1,888,573	1,673,786
II.	Engineering, metal works, etc. . .	10	10	655	102	757	4,357	4,475
III.	Food, drink, etc., manufacturing and distribution . . .	5	53	117	229	346	860	704
IV.	Clothing, hats, boots, etc. . .	5	5	422	100	522	1,715	1,003
V.	Books, printing, binding, etc. . .	1	1	5	..	5	208	300
VI.	Other manufacturing . . .	1	1	16	5	21	378	361
VII.	Building . . .	8	29	264	468	732	4,456	5,060
VIII.	Mines, quarries, etc. . .	204	293	75,673	1,893	77,566	2,737,776	3,147,091
IX.	Railway and tramway services . .	6	12	278	709	987	28,546	32,068
X.	Other land transport . . .	2	2	190	18	208	1,600	1,735
XI.	Shipping, wharf labour, etc. . .	1	1	91	..	91	91	168
XII.	Pastoral, agricultural, etc. . .	1	1	20	..	20	200	200
XIII.	Domestic, hotels, etc. . .	2	2	46	..	46	38	28
XIV.	Miscellaneous . . .	6	6	273	117	390	2,680	2,326
	Total—Australia . . .	259	926	88,293	17,111	105,404	4,671,478	4,869,305

3. Industrial Disputes, Australia, 1925 to 1929.—The following table gives particulars of the number of industrial disputes, the number of workpeople involved, and the losses in working days and wages caused by disputes which either commenced or were current during each of the years 1925 to 1929, classified according to industrial groups.

Satisfactory comparisons of the frequency of industrial disputes in classified industries can be made only after omitting those which are recorded for mining, quarrying, etc. (Group VIII.). For the year 1913 the proportion of disputes in those industries represented practically 50 per cent. of the total number recorded. In subsequent years the proportion remained high, ranging from 45 per cent. in 1917 and 1918 to as much as 81 per cent. in 1921 and 1924. During the year 1929 disputes classified in the Mining Group (VIII.) represented 79 per cent. of the total during the year, as compared with 68 per cent. during 1928. During the past five years working days lost through dislocations involving workpeople engaged in mining and quarrying work numbered 5,450,702, representing 57 per cent. of the total loss of working days during the period.

INDUSTRIAL DISPUTES.—AUSTRALIA, 1925 TO 1929.

Year.	Manu- facturing. (Groups I. to VI.)	Building. (Group VII.)	Mining. (Group VIII.)	Transport, Land and Sea. (Groups IX. to XI.)	Miscel- laneous. (Groups XII. to XIV.)	ALL GROUPS.
NUMBER OF DISPUTES.						
1925 ..	39	15	391	30	24	499
1926 ..	60	17	227	29	27	360
1927 ..	60	19	285	41	36	441
1928 ..	28	6	194	42	17	287
1929 ..	29	8	204	9	9	259
1925 to 1929 ..	216	65	1,301	151	113	1,846
NUMBER OF WORKPEOPLE INVOLVED.						
1925 ..	8,420	1,882	135,409	25,084	5,951	176,746
1926 ..	12,408	924	93,107	2,901	3,694	113,034
1927 ..	11,368	9,690	132,766	42,487	4,446	200,757
1928 ..	3,304	250	72,504	17,992	2,332	96,422
1929 ..	25,364	732	77,566	1,286	456	105,404
1925 to 1929 ..	60,864	13,518	511,352	89,750	16,879	692,363
NUMBER OF WORKING DAYS LOST.						
1925 ..	129,808	37,616	577,132	291,415	92,600	1,128,570
1926 ..	271,049	10,015	950,770	36,693	41,734	1,310,261
1927 ..	168,432	342,649	868,779	304,586	29,135	1,713,581
1928 ..	71,803	3,419	316,245	367,271	18,540	777,278
1929 ..	1,896,091	4,456	2,737,776	30,237	2,918	4,671,478
1925 to 1929 ..	2,537,183	398,154	5,450,702	1,030,202	184,927	9,601,168
ESTIMATED LOSS IN WAGES.						
1925 ..	£ 124,894	£ 35,674	£ 688,755	£ 209,521	£ 48,700	£ 1,107,544
1926 ..	240,712	7,721	1,098,111	27,306	32,963	1,415,813
1927 ..	138,418	293,792	1,009,580	210,214	24,692	1,676,696
1928 ..	61,160	3,225	378,655	317,337	14,982	775,359
1929 ..	1,680,629	5,060	3,147,091	33,971	2,554	4,869,305
1925 to 1929 ..	2,254,813	345,472	6,322,192	798,349	123,891	9,844,717

4. Summary of Disputes (involving Stoppage of Work), 1925 to 1929.—The following table gives particulars of the number of industrial disputes in each State in various years from 1925 to 1929, together with the number of workpeople involved, the number of working days lost, and the total estimated loss in wages.

INDUSTRIAL DISPUTES.—SUMMARY, 1925 TO 1929.

State or Territory.	Year.	No. of Disputes.	Establishments Involved in Disputes.	No. of Workpeople Involved.			No. of Working Days Lost.	Total Estimated Loss in Wages.
				Directly.	Indirectly.	Total.		
New South Wales ..	1925	430	458	123,292	16,937	140,229	649,840	£ 736,601
	1926	256	631	68,281	28,359	96,640	1,111,230	1,229,410
	1927	339	470	108,116	40,425	148,541	1,133,963	1,230,060
	1928	230	313	70,303	10,119	80,422	480,394	521,768
	1929	(a) 231	513	75,997	4,152	80,149	3,356,038	3,721,412
Victoria ..	1925	19	158	5,428	3,172	8,600	131,737	130,817
	1926	33	39	6,320	2,245	8,565	100,735	106,423
	1927	24	36	8,937	234	9,221	54,367	44,470
	1928	21	51	4,309	1,567	5,876	110,659	96,454
	1929	11	320	8,893	12,719	21,612	1,296,676	1,130,565
Queensland	1925	22	64	20,432	840	21,272	219,826	164,480
	1926	29	37	2,054	391	2,445	30,118	27,412
	1927	30	376	29,594	640	30,234	428,135	325,884
	1928	12	329	2,958	670	3,628	70,764	62,008
	1929	4	23	1,691	8	1,699	3,443	3,379
South Australia ..	1925	11	24	1,118	281	1,399	19,463	12,240
	1926	17	60	2,008	740	2,748	22,836	17,133
	1927	19	24	6,517	1,359	7,876	51,284	40,266
	1928	8	40	2,257	1,211	3,468	54,835	45,999
	1929	2	21	532	40	572	9,040	7,910
Western Australia ..	1925	10	180	3,321	814	4,135	98,941	56,358
	1926	9	28	523	78	601	9,081	5,998
	1927	20	25	3,345	47	3,392	23,819	19,944
	1928	11	62	2,106	422	2,528	54,896	43,472
	1929	4	8	827	50	877	2,672	2,771
Tasmania ..	1925	3	16	169	70	239	2,989	2,300
	1926	10	12	660	231	891	5,080	4,363
	1927	6	6	354	421	775	14,950	9,182
	1928	4	8	371	84	455	5,595	5,508
	1929	(a) 6	40	333	142	475	3,409	3,068
Northern Territory	1925	1	1	16	..	16	39	39
	1926	2	2	93	112	205	996	870
	1927	2	2	338	..	338	5,163	4,753
	1928	1	1	45	..	45	135	150
	1929	..	..	..	..	..	..	..
Fed. Cap. Territory	1925	3	5	823	33	856	5,735	4,709
	1926	4	4	829	110	939	30,185	24,204
	1927	1	5	380	..	380	1,900	2,137
	1928	..	..	..	..	..	..	..
	1929	1	1	20	..	20	200	200
Australia ..	1925	499	906	154,599	22,147	176,746	1,128,570	1,107,544
	1926	360	813	80,768	32,266	113,034	1,310,261	1,415,813
	1927	441	944	157,581	43,176	200,757	1,713,531	1,676,696
	1928	287	804	82,340	14,073	96,422	777,278	775,359
	1929	259	926	88,293	17,111	105,404	4,671,478	4,869,305

(a) See footnote on page 390.

Detailed information in regard to the disputes during these and previous years is given in the Labour Reports issued by this Bureau.

The number of industrial disputes recorded during 1929 was 259, as compared with 287 during the previous year. In New South Wales 231 disputes occurred. Of this number 194 involved workpeople engaged in coal mining and quarrying. Working days lost during 1929 totalled 4,671,478 for all disputes in Australia as compared with 777,278 working days lost during 1928. The estimated loss of wages was £4,869,305 in 1929 as compared with £775,359 for the year 1928. The losses in working days and wages are the highest recorded since 1917.

5. *Particulars of Principal Disputes in 1929.*—(i.) *General.*—The preceding tables show the number and effect of all disputes for the year 1929, classified according to Industrial Groups. Details regarding the more important disputes which occurred during the year are given hereunder. The figures show large increases compared with those of the previous year as regards number of working days and amount of wages lost. The number of disputes is the lowest since 1925. The tables show that of the total number of disputes (259) which occurred in 1929 no less than 204 were in connexion with the mining industry, and of these 194 occurred in New South Wales. The total loss in wages through all disputes in Australia was £4,869,305. The loss through disputes in the coal-mining industry in New South Wales was £3,087,134, or 63 per cent. of the total loss in wages for Australia.

(ii) *Details regarding Principal Disputes.*—Two outstanding industrial disputes occurred during the year 1929: one involved timber workers in New South Wales, Victoria, and South Australia, and the other concerned employees at the principal collieries on the Northern coal-fields of New South Wales.

The dispute in the timber industry was occasioned by the refusal of the Timber Workers' Union to accept the award of the Judge of the Commonwealth Court of Conciliation and Arbitration, made on 23rd January, 1929, following on the Full Court's order of the 18th December, 1928, declaring 48 hours as the standard hours in the timber industry, such hours to operate from 1st January, 1929. The dispute in South Australia was of short duration, but in New South Wales and Victoria the members of the union refused to work 48 hours per week. In New South Wales the men absented themselves on Saturdays during January, while in Victoria the employees worked 48 hours per week up to 21st January, and then decided to revert to 44 hours. The employers notified their workpeople that on and after 31st January, the 48 hours per week would be enforced, and that those not attending for work at starting time would be considered to have abandoned their employment. Practically all employees refused to continue work on the 48 hours per week basis.

At the date of the stoppage of work it was estimated that approximately 3,000 timber workers, joiners, carters, engine-drivers and others connected with the timber industry in New South Wales were involved, and approximately 5,000 in Victoria.

These numbers were greatly increased during the currency of the dispute, especially in Victoria, where the building trades were affected. In April, a number of building jobs in Melbourne were declared "black" by the Australasian Council of Trade Unions, the body acting on behalf of the employees. In accordance with a resolution passed by the members of the Master Builders' Association, the whole of the jobs in progress and under the control of members were closed down at the end of April. Building was suspended, and thousands of workpeople, including bricklayers, plasterers, carpenters, painters, brickmakers, plumbers, iron-workers, and other employees were thrown out of employment, and remained idle until 25th June, when, after a conference, work was resumed.

Employers in Sydney and Melbourne endeavoured to continue business, and the timber yards and saw-mills were kept open, manned by the staffs and volunteer workers. Picketing was resorted to by members of the unions, and conflicts occurred between the strikers and volunteer workers.

Pursuant to applications under Section 56c of the Commonwealth Conciliation and Arbitration Act, the Judge directed that a ballot of the members of the union be taken by an officer of the Court on the question whether members were prepared to work under the award dated 23rd January, 1929. A vote of approximately 40 per cent. of the members showed the following result:—Yes, 732; No, 5,318; and Informal, 43. Further references to the ballot and also to proceedings in the Commonwealth Court concerning the dispute are made in Labour Report, No. 20.

During May and June negotiations for settling the dispute in Victoria took place. A conference convened by the Lord Mayor of Melbourne on 1st May was unsuccessful, as agreement could not be reached on the question of hours. Negotiations continued, but settlement was not reached until 22nd June, when a conference presided over by the Chairman of the Commonwealth Bank was successful in arriving at terms for the termination of the dispute. Work was resumed in Victoria on 25th June, 1929.

The terms of the settlement of the dispute in Victoria did not apply to New South Wales. In this State the employment of volunteer labour in the timber yards was the cause of many disturbances in the vicinity of the yards during July and August, and strong measures were taken to preserve peace. The dispute continued until 2nd October, when it was declared "off" by the union officials.

The most serious dislocation of work recorded during recent years in Australia commenced on 2nd March, 1929, when the principal collieries on the Northern coalfields of New South Wales closed down owing to the refusal of the employees to accept reduced rates of wages. For some time prior to the closing down of the collieries, the coal position in Australia had become very serious, owing to depression in trade and the loss of oversea markets. Exports of Australian coal declined considerably during 1928, as compared with previous years, and oversea competition became so keen that coal was being imported into Australia at a lower price than locally produced coal could be sold. The New South Wales colliery proprietors were unable to quote at a profit against oversea coal, and attributed their inability to do so to the high cost of production locally.

The Premier of New South Wales proposed that the owners of the collieries should forgo 1s. per ton of their profits, on condition that the State Government reduced railway freights and other Government charges by the equivalent of 2s. per ton, and mineworkers undertook to accept reduced rates for hewing and in other wages, equivalent to 1s. per ton. These reductions represented 4s. per ton, and were considered to be the minimum that would be required to stimulate local consumption. In order to compete successfully with oversea coal it was estimated that a reduction of at least 5s. per ton was necessary, and the Commonwealth Government undertook to help the industry by paying a Commonwealth bounty of 1s. per ton upon all coal shipped out of New South Wales.

These proposals were submitted to the Coal and Shale Employees' Federation, and were rejected by the officials on the ground that the employees were not prepared to accept any reduction in rates of wages. The owners thereupon withdrew their offer to forgo 1s. per ton of their profits.

Trade continued to decline, and the proprietors of the principal collieries on the Northern field decided to close the pits, owing to the lack of orders and to their inability to compete at a profit against the oversea coal. The closing of the majority of the Northern collieries, numbering about 30 with 10,000 employees, occurred on 2nd March, 1929, after a fortnight's notice of the owners' intentions had been given to the employees.

On 31st May, a Royal Commission was appointed to inquire into and make recommendations and report upon—(a) the present position of the coal industry, including the production, carriage, export, distribution, and sale of coal; (b) the causes which have led to the present position of the coal industry. The Commission met during June, and issued an interim report in September, but employees would not accept the finding. The final report of the Commission was not completed at the end of 1929.

During November, the State Government decided to open one of the collieries, and invited applications from men prepared to accept work at reduced rates of pay. The mine was opened in December, and serious disturbances occurred. Coal miners in Victoria ceased work for a short period in sympathy with the colliery employees in New South Wales.

Notwithstanding special efforts by the members of the Commonwealth and State Governments to effect a settlement of the dispute, the collieries remained idle during 1929. Numerous conferences were convened, including one under the provisions of the Industrial Peace Act, and two under Section 16 (a) of the Commonwealth Conciliation and Arbitration Act. The dispute continued until June, 1930, when work was resumed on reduced rates of pay, viz., 12½ per cent. on hewing rates and 6d. per day on daily rates. Further reference to this dispute will be found in Labour Report No. 20.

In regard to extensive dislocations of industry prior to the institution of systematic inquiries by this Bureau, efforts were made to obtain statistical data relating to the shearers' disputes in 1890, 1891, and 1894, and the maritime dispute in the early part of 1891, but precise information was not obtainable.

6. Duration of Industrial Disputes, 1929.—The following table gives particulars respecting the number of disputes, workpeople directly and indirectly involved, working days lost, and estimated amount of loss in wages respectively, consequent on the cessations of work recorded for Australia during the year 1929, classified under the adopted limits of duration :—

INDUSTRIAL DISPUTES.—DURATION, AUSTRALIA, 1929.(a)

Limits of Duration.	No. of Disputes.	No. of Workpeople Involved.			Number of Working Days Lost.	Total Estimated Loss in Wages.
		Directly.	Indirectly.	Total.		
1 day and less	127	41,299	828	42,127	47,869	£ 55,514
2 days and more than 1 day	31	7,942	528	8,470	15,697	16,631
3 days and more than 2 days	21	5,217	300	5,517	16,327	18,865
Over 3 days and less than 1 week (6 days)	31	7,721	799	8,520	34,049	38,949
1 week and less than 2 weeks	23	5,540	201	5,741	47,784	51,893
2 weeks and less than 4 weeks	11	1,506	239	1,745	27,752	28,454
4 weeks and less than 8 weeks	5	154	37	191	5,262	5,812
8 weeks and over ..	10	18,914	14,179	33,093	4,476,738	4,653,187
Total	259	88,293	17,111	105,404	4,671,478	4,869,305

(a) See footnote (a) on page 390.

Similar figures for the years 1913 to 1928 will be found in previous issues of the Year Book and in the Labour Reports of this Bureau.

7. Causes of Industrial Disputes, 1913 to 1929.—The following table shows the number of disputes, number of workpeople involved, and the total number of working days lost in disputes during the years 1913 and 1924 to 1929, classified according to principal cause :—

INDUSTRIAL DISPUTES.—CAUSES, AUSTRALIA, 1913 TO 1929.

Causes of Dispute.	1913.	1924.	1925.	1926.	1927.	1928.	1929.
NUMBER OF DISPUTES.							
1. Wages—							
(a) For increase ..	42	44	33	23	24	3	8
(b) Against decrease ..	4	7	5	5	4	3	6
(c) Other wage questions	31	95	99	67	66	39	45
2. Hours of Labour—							
(a) For reduction ..	3	2	4	13	14	2	6
(b) Other disputes re hours	7	4	6	2	4	2	2
3. Trades Unionism—							
(a) Against employment of non-unionists ..	8	6	8	5	12	6	3
(b) Other union questions	5	31	27	22	24	11	12
4. Employment of particular Classes or Persons ..	44	137	118	108	152	105	87
5. Working Conditions ..	51	111	106	46	72	48	31
6. Sympathetic ..	5	8	16	8	5	9	6
7. Other Causes ..	8	59	77	61	64	54	53
Total	208	504	499	360	441	287	(a)259

NUMBER OF WORKPEOPLE INVOLVED.

1. Wages—							
(a) For increase ..	8,633	8,312	23,443	17,046	7,316	2,775	1,414
(b) Against decrease ..	563	1,113	1,123	1,275	300	1,317	11,332
(c) Other wage questions	7,160	30,585	31,387	18,883	20,297	17,057	8,742
2. Hours of Labour—							
(a) For reduction ..	460	1,328	462	9,730	7,813	61	21,646
(b) Other disputes re hours	1,819	1,172	2,668	290	288	1,005	2,067
3. Trades Unionism—							
(a) Against employment of non-unionists ..	5,370	1,005	1,592	125	4,432	193	103
(b) Other union questions	1,418	12,078	10,957	3,790	25,848	2,311	4,367
4. Employment of particular Classes or Persons ..	11,370	39,839	36,075	25,165	55,174	35,379	22,933
5. Working Conditions ..	10,785	36,030	35,034	12,889	29,766	14,169	4,672
6. Sympathetic ..	947	436	5,328	3,499	1,484	6,123	11,604
7. Other Causes ..	1,758	19,948	28,677	20,342	48,039	16,032	16,524
Total	50,283	152,446	176,746	113,034	200,757	96,422	105,404

(a) See footnote (a), page 390.

INDUSTRIAL DISPUTES—CAUSES, AUSTRALIA, 1913 TO 1929—*continued.*

Causes of Dispute.	1913.	1924.	1925.	1926.	1927.	1928.	1929.
NUMBER OF WORKING DAYS LOST.							
1. Wages—							
(a) For increase ..	100,069	120,317	209,356	530,183	150,691	6,548	7,438
(b) Against decrease ..	9,438	13,553	24,352	2,573	2,578	3,824	2,542,157
(c) Other wage questions ..	78,183	111,613	154,169	82,898	83,831	80,755	47,261
2. Hours of Labour—							
(a) For reduction ..	2,774	180,440	12,816	280,152	305,782	725	1,887,196
(b) Other disputes re hours ..	15,111	42,441	16,173	290	4,487	2,667	3,183
3. Trades Unionism—							
(a) Against employment of non-unionists ..	91,002	2,555	14,784	1,623	82,156	2,137	424
(b) Other union questions ..	32,388	40,046	105,195	15,607	204,802	8,900	49,924
4. Employment of particular Classes or Persons ..	191,723	253,779	214,738	114,917	310,425	423,555	78,492
5. Working Conditions ..	73,562	124,041	150,325	123,300	303,788	98,852	8,545
6. Sympathetic ..	24,066	926	41,046	38,381	3,573	106,358	23,482
7. Other Causes ..	5,212	78,935	185,616	70,247	261,468	42,957	23,381
Total ..	623,528	918,646	1,128,570	1,310,261	1,713,681	777,278	4,671,478

The main causes of industrial disputes are "Wage" questions, "Working Conditions," and "Employment of Particular Classes or Persons." In each of the years 1913 to 1925, with the exception of 1922, the number of dislocations concerning wages exceeded those caused by any other question, and varied between a minimum proportion of 26 per cent. in 1922 and a maximum of 45 per cent. in 1916. During 1929 the number of disputes concerning "Wages" represented only 23 per cent. of the total number for the year. The majority of the dislocations of work classified under the heading, "Employment of Particular Classes or Persons," are stoppages for the purpose of protesting against the dismissal of certain employees, who, in the opinion of their fellow-workers, have been unfairly treated or victimized. This class of dispute occurs very frequently in the coal-mining industry. The number of disputes over "Trade Union" questions has represented a fairly uniform proportion of the total number of disputes during the years under review, while stoppages of work concerning "Hours of Labour" increased during 1926 and 1927, but decreased during 1928 and 1929. "Sympathetic" disputes have not been numerous during the past three years.

8. Results of Industrial Disputes.—The following table shows the number of disputes, number of workpeople involved, and the number of working days lost in disputes throughout Australia during the five years 1925 to 1929, classified according to results :—

INDUSTRIAL DISPUTES CLASSIFIED ACCORDING TO RESULTS.—AUSTRALIA, 1925 TO 1929.(a)

Year.	No. of Disputes.				Number of Workpeople Involved in Disputes.				Total Number of Working Days Lost by Disputes.			
	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.
1925 ..	130	335	20	6	50,983	116,658	4,844	2,829	448,136	549,796	52,321	12,923
1926 ..	72	243	30	11	11,631	85,115	14,220	1,623	73,313	801,093	257,004	21,486
1927 ..	88	307	35	5	28,005	152,429	18,571	995	207,009	1,198,163	294,102	10,285
1928 ..	39	228	14	1	7,362	85,306	2,814	178	55,757	674,076	16,309	178
1929 a b	70	134	44	5	11,200	59,659	7,150	15,304	38,943	1,995,064	43,174	26,302

(a) See footnote (a), page 390.

(b) The following particulars of disputes which were incomplete at the 31st December, 1929, should be added to the above figures to effect a balance with those published in the preceding table.—New South Wales and Australia—6 disputes; 41 establishments; 12,091 workpeople involved; and 2,567,995 working days lost.

9. Methods of Settlement.—The following tables show for Australia the number of disputes, number of workpeople involved, and number of working days lost in industrial disputes during the years 1913 and 1924 to 1929, classified according to the adopted schedule of methods of settlement :—

INDUSTRIAL DISPUTES.—METHODS OF SETTLEMENT, AUSTRALIA, 1913 TO 1929.(a)

Methods of Settlement.	1913.	1924.	1925.	1926.	1927.	1928.	1929.(b)
NUMBER OF DISPUTES.							
Negotiations—							
Direct between employers and employees or their representatives	119	264	209	166	229	138	129
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	17	20	24	16	18	8	8
Under State Industrial Acts—							
By intervention, assistance, or compulsory conference	19	11	12	8	13	10	3
By reference to Board or Court	22	7	2	10	19	8	1
Under Commonwealth Conciliation and Arbitration Act—							
By intervention, assistance, or compulsory conference	4	12	13	13	19	6	6
By Filling Places of Workpeople on Strike or Locked Out	13	5	4	8	5	10	7
By Closing-down Establishment permanently	1	2	1		10	3	3
By Other Methods	13	179	226	135	122	99	96
Total	208	500	491	356	435	282	(b)253

NUMBER OF WORKPEOPLE INVOLVED.

Negotiations—							
Direct between employers and employees or their representatives	23,357	70,895	75,961	44,995	94,070	37,708	22,193
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	3,172	4,448	12,767	17,072	5,839	1,242	19,161
Under State Industrial Acts—							
By intervention, assistance, or compulsory conference	6,505	2,519	1,781	936	3,763	2,009	487
By reference to Board or Court	12,774	2,952	208	684	4,314	2,975	56
Under Commonwealth Conciliation and Arbitration Act—							
By intervention, assistance, or compulsory conference	659	4,262	3,251	4,332	33,517	1,497	511
By Filling Places of Workpeople on Strike or Locked Out	658	130	160	245	533	11,047	5,411
By Closing-down Establishment permanently	170	170	28		1,104	266	144
By Other Methods	2,988	60,370	81,158	44,325	56,860	38,916	45,350
Total	50,283	151,746	175,314	112,589	200,000	95,660	93,313

NUMBER OF WORKING DAYS LOST.

Negotiations—							
Direct between employers and employees or their representatives	94,400	373,155	470,110	417,158	700,968	273,254	96,475
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	26,335	103,005	320,046	549,427	100,148	36,937	1,279,258
Under State Industrial Acts—							
By intervention, assistance, or compulsory conference	187,871	41,900	17,650	11,281	80,815	38,878	5,261
By reference to Board or Court	221,769	142,939	4,338	8,744	60,236	29,533	56
Under Commonwealth Conciliation and Arbitration Act—							
By intervention, assistance, or compulsory conference	2,105	74,376	67,272	134,841	305,303	3,962	1,382
By Filling Places of Workpeople on Strike or Locked Out	14,139	3,040	1,163	2,865	9,706	266,369	610,686
By Closing-down Establishment permanently	20,400	1,250	1,932		30,289	750	9,861
By other Methods	56,509	150,526	180,665	118,580	422,094	96,637	100,004
Total	623,528	890,191	1,063,176	1,242,896	1,709,559	746,320	2,103,483

(a) See footnote on page 390.

(b) See footnote (b) on previous page.

The majority of the disputes were settled by direct negotiations between employers and employees, the proportion so settled ranging between 47 per cent in 1924 and 76 per cent. in 1921. Of the 253 disputes during 1929, 129 or 51 per cent. were settled by this method. The proportion of dislocations settled by compulsory conferences or the intervention and assistance of officials under State or Commonwealth Arbitration Acts has varied considerably during the period under review, ranging from 2 per cent. in 1923 to 15 per cent. in 1920. The proportion in 1929 was 4 per cent. In connexion with the comparatively large number of disputes which are classified as having been settled "By other methods," many stoppages of work occur each year, principally at collieries, but the cause for such stoppages is not officially known to the employers or their representatives. Such stoppages usually last for one day, and work is resumed without negotiations for a settlement of the trouble.

§ 2. Fluctuations in Employment.

1. **General.**—The particulars given in the following tables are based upon information furnished by the secretaries of trade unions. The membership of the unions regularly reporting exceeds 400,000. Unemployment returns are not collected from unions the members of which are in permanent employment, such as railway and tramway employees, and public servants, or from unions whose members are casually employed (wharf labourers, etc.). Very few of the unions pay unemployment benefit, but the majority of the larger organizations have permanent secretaries and organizers who are closely in touch with the members and with the state of trade within their particular industries. In many cases unemployment registers are kept, and provision is made in the rules for payment of reduced subscriptions by members out of work. In view of these facts, and of the large membership of the unions from which quarterly returns are received, percentage unemployment results based on the information supplied may be taken to show the general trend of unemployment. Seasonal fluctuations in unemployment have been provided for by collecting returns quarterly since the 1st January, 1913, the yearly figures quoted representing the average of the four quarters.

2. **Unemployment.**—(i) *States.* In addition to the qualifications referred to above, allowance must be made for the circumstance that the industries included in the returns from trade unions are not quite identical in the various States. The results, may, however, be taken as representing fairly well labour conditions generally.

UNEMPLOYMENT.—STATES, 1929.

State.	Unions Reporting.		Unemployed.	
	Number.	Members.	Number.	Percentage.
New South Wales	107	181,478	20,846	11.5
Victoria	76	113,740	12,740	11.1
Queensland	47	55,284	3,917	7.1
South Australia	60	38,100	5,979	15.7
Western Australia	58	26,386	2,633	9.9
Tasmania	34	9,105	1,244	13.4
Australia	382	424,093	47,359	11.1

(ii) *Summary for Australia.* The following table gives a summary for Australia for the last five years :—

UNEMPLOYMENT.—AUSTRALIA, 1925 TO 1929.

Particulars.	Unions.	Membership.	Unemployed.	
			Number.	Percentage.
1925	380	391,380	34,620	8.8
1926	374	415,397	29,326	7.1
1927	375	445,985	31,032	7.0
1928	375	423,422	45,669	10.8
1929	382	424,093	47,359	11.1
1928 1st Quarter	378	427,992	45,638	10.7
2nd "	363	416,827	46,656	11.2
3rd "	378	419,899	47,745	11.4
4th "	379	423,970	42,637	9.9
1929 1st Quarter	375	420,756	39,159	9.3
2nd "	376	409,503	40,996	10.0
3rd "	388	433,388	52,480	12.1
4th "	390	432,727	56,801	13.1

NOTE.—Similar figures for each of the four quarters of the years since 1912 will be found in the Labour Reports. The quarterly figures show the number of persons who were out of work for three days or more during a specified week in each quarter, and the annual figures, the average of the four quarters; they do not include persons out of work through strikes or lock-outs.

The highest percentage of unemployed yet recorded (13.1) was reached in the fourth quarter of 1929.

(iii) *Industrial Groups.* The next table shows the percentages unemployed in industrial groups. Industries in which employment is either unusually stable or exceptionally casual, such as railways, shipping, agricultural, pastoral, etc., and domestic, hotels, etc., are insufficiently represented in the returns owing to the impossibility of securing the necessary information from the trade unions. Particulars are not, therefore, shown separately for these groups, such returns as are available being included in the last group, "Other and Miscellaneous."

UNEMPLOYMENT IN INDUSTRIAL GROUPS.—AUSTRALIA, 1929.

Industrial Group.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
I. Wood, Furniture, etc. ..	15	15,059	1,949	12.4
II. Engineering, Metal Works, etc. ..	63	81,560	9,999	12.3
III. Food, Drink, Tobacco, etc. ..	51	34,266	3,541	10.3
IV. Clothing, Hats, Boots, etc. ..	21	38,027	4,083	10.7
V. Books, Printing, etc. ..	12	20,121	624	3.1
VI. Other Manufacturing ..	60	39,215	7,322	18.6
VII. Building ..	45	51,871	6,001	11.4
VIII. Mining, Quarrying, etc. ..	19	22,193	2,536	11.3
X. Land Transport other than Railway and Tramway Services ..	12	15,754	1,348	8.6
IX., XI., XII., XIII., and XIV. Other and Miscellaneous ..	84	106,027	9,956	9.4
All Groups ..	382	424,093	47,359	11.1

3. Seasonal Employment in Australia.—An investigation concerning the extent of seasonal employment in Australia was made during 1929. The State Statisticians were requested to furnish brief reports regarding the industries and callings in their respective States subject to seasonal fluctuations. From the reports received from these officials, supplemented by information from other sources, particulars were compiled and published in Official Year Book, No. 22, and in Labour Report, No. 19.

§ 3. Apprenticeship.

In Year Book No. 16, pp. 602-3, information was given with regard to legislation relating to the question of apprenticeship. Tables were included showing the periods of apprenticeship fixed in the awards of the various industrial tribunals of the States and Commonwealth, also the proportion of apprentices to journeymen and journeywomen. This information has been omitted from the present issue, but further investigations are being made, and additional information will be found in the Appendix to this volume.

D.—ASSOCIATIONS.

§ 1. Labour Organizations.

1. Registration.—(i) *Under Trade Union Acts.* The benefits obtained by registering trade unions under the Trade Union Acts in force in the various States are not considered of much value; consequently the statistics of registered trade unions of employees do not accurately represent the position of unionism. Further, the returns for past years are so defective as to be practically valueless, inasmuch as no reliable indication is afforded of the numerical and financial position of the unions. Some of the registered unions fail to supply returns; this non-supply may lead to cancellation of the registration. Others have obtained the cancellation of their certificates of registration, the apparent reason being that they proposed to register under the Commonwealth Conciliation and Arbitration Act or a State Arbitration Act. In Queensland, some of the largest labour unions withdrew from registration during 1911, mainly on account of the necessity for closer restriction of their objects as set forth in their rules, consequent on legal decisions affecting trade unions. In Victoria and in South Australia very few of the existing unions are registered under the Trade Union Acts. It will be seen, therefore, that the available information under this heading is too meagre for statistical purposes.

(ii) *Under Industrial Arbitration Acts.* Information with regard to registrations of employers' associations and trade unions under the various State Industrial Arbitration Acts will be found in previous issues of the Year Book. The latest information available as to registrations is as follows:—New South Wales, 156 industrial unions of employers and 153 industrial unions of employees, the membership of the latter being 322,618; Queensland, 5 industrial unions of employers with 9,505 members and 78 industrial unions of employees with approximately 149,450 members; South Australia, 24 organizations of employees with 24,652 members; Western Australia, 37 organizations of employers with 1,111 members, and 129 organizations of employees with 47,295 members. There is no provision in the South Australian Industrial Acts for the registration of organizations of employers, and in Victoria and Tasmania, where Wages Board systems of wage fixation are in operation, organizations of employers and employees are not required to register. Registration under Commonwealth legislation began in 1906. In that and the four following years, there was but one union of employers; another was registered in 1911. The unions of employees registered were 20 in 1906, with 41,413 members. In December, 1929, there were on the register 28 organizations of employers with 17,810 persons, firms or corporations affiliated; and 137 organizations of employees with approximately 771,000 members.

2. **Particulars regarding Trade Unions.**—(i) *Types.* The trade unions in Australia are very diverse in character, and range from the small independent association to the large interstate organization, which, in its turn, may be merely a branch of a British or International union. Broadly speaking, there are four distinct classes of labour organizations, viz. :—(i) the local independent, (ii) the State, (iii) the interstate, and (iv) the Australasian or International, but a number of variations occur from each of these classes. The leading characteristics of each of these types were briefly outlined in Labour Report No. 2 (pp. 7 to 9) issued by this Bureau.

(ii) *Number and Membership.* As already stated, the figures for trade unions registered under the Acts do not represent the position of unionism in Australia. In 1912, the Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics was established, and with the cordial co-operation of the officials of the labour organizations, comprehensive figures relating to the development of organized labour are now available. The following table shows the position at the end of 1929 :—

TRADE UNIONS, BRANCHES, AND MEMBERS, 1929.

State or Territory.	Number of Separate Unions.	Number of Branches.	Number of Members.
New South Wales	195(c)	598	354,430(c)
Victoria	151	410	240,809
Queensland	106	315	154,627
South Australia	105	173	69,479
Western Australia	129	189	63,619
Tasmania	81	72	17,215
Northern Territory	4	..	989
Total	771	1,757	901,168
Australia (a)	374(a)	2,154(b)	901,168

(a) Allowing for interstate duplication. The figures represent the number of distinct organizations and interstate groups of organizations in Australia—not the total number of organizations, which are practically independent and self-governing. (b) See remarks below. (c) Includes 7 unions with a membership of 917 in the Federal Capital Territory.

In the preceding table the number of separate unions in each State refers to the number of unions which are represented in each State, exclusive of branches therein, and each union is counted once only. Except in the last line, the number of branches indicates the number of branches of State head offices, which may, of course, themselves be branches of an interstate or larger organization. In taking the total number of separate unions in Australia (see last line but one), it is obvious that, in the case of interstate and similar unions, there will be duplication, since each such union is counted once in each State in which it has any branches. In the figures given in the last line allowance has been made for this duplication. State branches of interstate or federated unions, as well as sub-branches within a State, are included under the heading "Branches" in the third column—last line. The scheme of organization of these interstate or federated unions varies greatly in character, and the number of separate Commonwealth unions does not, therefore, fairly represent the number of practically independent organizations in Australia. In some of these unions the State organizations are bound together under a system of unification and centralized control, while in others the State units are practically independent and self-governing, the federal bond being loose and existing only for one or two specified purposes. There are therefore 374 distinct organizations and interstate groups of organizations in Australia, having 2,154 State branches and sub-branches, and a total of 901,168 members.

(iii) *Classification in Industrial Groups.* The following table shows the number of unions and members thereof in Australia at the end of each of the last five years. The number of unions specified refers to the number of different unions represented in each State; and, while interstate or federated unions are counted once in each State in which they are represented, sub-branches within a State are not counted.

TRADE UNIONS.—INDUSTRIAL GROUPS, AUSTRALIA, 1925 TO 1929.

Industrial Groups.	1925.	1926.	1927.	1928.	1929.
NUMBER OF UNIONS.					
I. Wood, Furniture, etc.	18 (4)	18 (4)	18 (4)	18 (4)	18 (4)
II. Engineering, Metal Works, etc.	68 (21)	68 (22)	61 (23)	60 (23)	61 (22)
III. Food, Drink, Tobacco, etc.	65 (39)	65 (35)	63 (32)	65 (33)	65 (33)
IV. Clothing, Hats, Boots, etc.	22 (10)	22 (9)	24 (11)	25 (12)	25 (12)
V. Books, Printing, etc.	14 (10)	14 (9)	13 (8)	14 (8)	14 (8)
VI. Other Manufacturing	78 (36)	77 (37)	80 (41)	78 (40)	79 (42)
VII. Building	51 (31)	51 (31)	49 (28)	51 (28)	50 (28)
VIII. Mining, Quarrying, etc.	15 (12)	15 (12)	15 (12)	17 (14)	18 (14)
IX. Railway and Tramway Services	50 (33)	51 (33)	51 (28)	51 (30)	52 (31)
X. Other Land Transport	13 (8)	13 (8)	13 (8)	12 (5)	11 (5)
XI. Shipping, etc.	56 (31)	54 (26)	54 (24)	58 (29)	59 (28)
XII. Pastoral, Agricultural, etc.	8 (3)	8 (3)	8 (3)	8 (3)	8 (3)
XIII. Domestic, Hotels, etc.	22 (16)	23 (16)	23 (19)	24 (20)	24 (19)
XIV. Miscellaneous	263 (128)	289 (127)	287 (128)	287 (130)	287 (125)
Total	743 (382) <i>a</i>	768 (372) <i>a</i>	759 (369) <i>a</i>	768 (379) <i>a</i>	771 (374) <i>a</i>

NUMBER OF MEMBERS.

I. Wood, Furniture, etc.	32,279	35,315	37,110	35,740	35,898
II. Engineering, Metal Works, etc.	72,750	79,201	82,720	87,417	85,425
III. Food, Drink, Tobacco, etc.	58,326	67,255	70,012	71,994	71,948
IV. Clothing, Hats, Boots, etc.	44,632	47,932	53,641	56,874	56,300
V. Books, Printing, etc.	16,532	18,592	19,214	19,771	19,817
VI. Other Manufacturing	41,689	44,605	47,671	46,779	44,638
VII. Building	55,314	53,881	57,234	60,416	61,191
VIII. Mining, Quarrying, etc.	44,403	46,014	49,179	43,044	43,098
IX. Railway and Tramway Services	108,037	114,899	121,300	116,061	113,281
X. Other Land Transport	18,219	20,844	22,137	20,632	18,817
XI. Shipping, etc.	39,309	40,594	42,702	38,361	38,308
XII. Pastoral, Agricultural, etc.	48,157	54,173	60,394	55,547	50,266
XIII. Domestic, Hotels, etc.	24,251	25,760	28,313	30,488	29,767
XIV. Miscellaneous	191,824	202,413	220,025	228,417	232,359
Total	795,722	851,478	911,652	911,541	901,168

(a) Allowing for interstate duplication.

(iv) *Trade Unions—Numbers and Percentages of Male and Female Members.—Australia.* The Census of 1921 gives the percentage of male and female employees (i.e., persons in "receipt of wages or salary," and persons "unemployed"), 20 years of age and over, on the total male and female population, and by applying these percentages to the estimated total male and female population at the end of each year, an estimate of the number of adult employees of each sex in the year is obtained.

The following table shows separately for males and females (a) the number of members of trade unions, (b) the estimated number of employees of each sex 20 years of age and over in all professions, trades, and occupations, and (c) the percentage of the former (a) on the latter (b) at the end of each year, 1925 to 1929. The estimated number of employees includes all persons (over the age specified) in receipt of wages or salary, as well as those unemployed, and therefore embraces a large number of adults who are not eligible for membership of any trade union, such as certain persons employed in professional occupations, as well as others who, while eligible for membership so far as the nature of their trade or occupation is concerned, do not reside in a locality which is covered by any union devoted to their particular trade or occupation. Moreover the age at which persons are eligible for membership varies in different unions. The Census results are classified in quinquennial age groups, and age 20 years is taken as approximating to the age of admission to membership. A line has also been added showing the estimated numbers of "junior" workers under 20 years of age.

TRADE UNIONS—NUMBER AND PERCENTAGES OF MALE AND FEMALE MEMBERS.—AUSTRALIA, 1925 TO 1929.

Particulars.	1925.	1926.	1927.	1928.	1929.
MALES.					
Estimated Total No. of Employees 20 years of age and over	1,200,592	1,240,914	1,267,636	1,288,200	1,302,400
No. of Members of Unions	699,399	745,681	793,131	785,189	774,031
Percentage of Members on Estimated Total					
Number of Employees	58.3	60.1	62.6	60.9	59.4
Junior Workers (under 20)	222,530	230,003	234,994	239,050	241,000
FEMALES.					
Estimated Total No. of Employees 20 years of age and over	286,053	293,594	299,205	304,000	308,200
No. of Members of Unions	96,323	105,797	118,521	126,352	127,137
Percentage of Members on Estimated Total					
Number of Employees	33.7	36.0	39.6	41.5	41.3
Junior Workers (under 20)	126,212	129,540	132,015	134,200	136,000

(v) *Interstate or Federated Unions.* The following table gives particulars as to the number and membership of interstate or federated unions in 1929 :—

INTERSTATE OR FEDERATED UNIONS.—AUSTRALIA, 1929.

Particulars.	Unions Operating in—					Total.
	2 States.	3 States.	4 States.	5 States.	6 States. (=)	
Number of Unions	19	13	16	20	43	111
Number of Members	26,055	53,967	107,030	208,721	352,765	748,538

(a) Certain unions in this group have, in addition to branches in each of the six States, branches in the Northern Territory and the Federal Capital Territory.

It appears, therefore, that 111 out of the 374 separate associations and groups of associations in Australia are organized on an interstate basis. The membership of these 111 unions reaches 748,538, or 83 per cent. of the membership (901,168) of all unions.

3. Central Labour Organizations.—In each of the capital cities, and in a number of industrial centres elsewhere, delegate organizations, consisting of representatives from a group of trade unions, have been established. Their revenue is raised by means of a per capita tax on the members of each affiliated union. In most of the towns where such central organizations exist, the majority of the local unions are affiliated with the central organization, which is usually known as the Labour or the Trades Hall Council, or the Labour Federation. In Western Australia a unified system of organization extends over the industrial centres throughout the State. In this State there is a provincial branch of the Australian Labour Party, having a central council and executive, and metropolitan and branch district councils, to which the local bodies are affiliated. The central council, on which all district councils are represented, meets periodically. In the other five States, however, the organization is not so close, and, while provision usually exists in the rules of the central council at the capital city of each State for the organization of district councils or for the representation of the central council on the local councils in the smaller industrial centres of the State, the councils in each State are, as a matter of fact, independent bodies.

A new Central Labour Organization, called the Australasian Council of Trade Unions, came into being during 1927. The Council was created to function on behalf of the Trade Unions of the Commonwealth, and was founded at an All-Australian Trade Union Congress, held in Melbourne in May, 1927. The Australasian Council is based on the Metropolitan Trades and Labour Councils in each State, such bodies having the right to appoint two representatives to act on the Executive of the Council. The Metropolitan Trades and Labour Councils are the branches of the Australasian Council. In addition to the representatives from the Metropolitan Councils the Executive consists of four officers, viz., the President, two Vice-Presidents, and a Secretary, who are elected by and from the All-Australian Trade Union Congress.

The objective of the Council is the socialization of industry, i.e., production, distribution, and exchange. The methods to be adopted are:—(a) The closer organization of the workers by the transformation of the Australasian Trade Union Movement from the Craft to an Industrial basis by the establishment of one Union in each industry; (b) the consolidation of the Australasian Labour Movement with the object of unified control, administration, and action; (c) the centralized control of industrial disputes.

The table below shows the number of metropolitan and district or local labour councils, together with the number of unions and branches of unions affiliated thereto in each State at the end of the year 1929 :—

CENTRAL LABOUR ORGANIZATIONS.—NUMBER, AND UNIONS AFFILIATED, 1929.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Number of Councils	3	5	4	2	9	2	1	26
Number of Unions and Branch Unions affiliated ..	87	189	78	64	227	59	1	705

The figures given in the preceding table as to number of unions do not necessarily represent separate unions, since the branches of a large union may be affiliated to the local trades councils in the several towns in which they are represented.

Between the trade union and the central organization of unions may be classed certain State or district councils organized on trade lines, and composed of delegates from separate unions, the interests of the members of which are closely connected by reason of the occupation of their members. Delegate councils of bakers, bread carters, and mill employees, or of unions connected directly or indirectly with the iron, steel, or brass trades, or with the building trades may be so classed.

4. **Laws relating to Conditions of Labour.**—In Official Year Book No. 16, pp. 538 to 566, a conspectus was given of Labour Laws in force in Australia at the end of the year 1922, and of Acts and Regulations relating to Factories and Shops.

Information was contained in the same issue with regard to employment under Mining Acts, followed by a brief reference to Employers' Liability and Workmen's Compensation Acts and miscellaneous legislation relating to conditions of labour enacted by the States. A conspectus of the Tribunals for the Regulation of Wages and Conditions of Labour was also included. Owing to considerations of space these references have been omitted from the present issue.

§ 2. Employers' Associations.

1. **General.**—Recent investigations show that the spirit of associations is no less manifest in the case of employers than in the case of workers. Associations for trade purposes merely are not included in the present chapter, which deals with those associations only whose members are united for their own protection, and for representation in cases before Arbitration Courts, Wages Boards and other wage-fixing tribunals. Associations of employers and employees are recognized under the Commonwealth Conciliation and Arbitration Act as well as under several State Acts, and organizations of these bodies may be registered.

The year 1922 was the first for which information was collected, and detailed particulars for that and subsequent years will be found in previous issues of the Official Year Book and in the Labour Reports.

2. **Employers' Associations in each State.**—The following table gives particulars of the number of employers' associations in each State at the end of the years 1925 to 1929 :—

EMPLOYERS' ASSOCIATIONS.—STATES, 1925 TO 1929.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Total.
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NUMBER OF ASSOCIATIONS.

1925	133	141	78	52	51	25	480
1926	136	143	72	52	50	25	478
1927	..	..	141	136	77	52	52	27	485
1928	..	..	146	140	76	56	59	28	505
1929	..	..	146	154	80	56	62	29	527

NUMBER OF BRANCHES.

1925	..	..	480	621	194	1	17	2	1,315
1926	..	..	464	617	183	..	16	..	1,230
1927	..	..	825	483	109	..	281	1	1,699
1928	..	..	907	525	188	13	301	1	1,935
1929	..	..	921	526	191	12	301	6	1,957

MEMBERSHIP.

1925	..	..	38,931	34,274	17,831	6,346	3,369	2,599	103,350
1926	..	..	42,666	32,386	21,113	6,572	8,356	2,481	113,574
1927	..	..	53,715	31,629	18,381	6,361	10,190	2,464	122,740
1928	..	..	55,353	33,626	18,393	6,751	10,390	2,668	127,181
1929	..	..	57,839	36,357	20,113	6,871	11,410	2,752	135,342

The large increase shown for "Number of Branches" since the year 1925 is due to the inclusion of associations representing agricultural interests, while the increase in total membership is partly attributable to a more complete collection of statistics relating to these organizations.

3. **Employers' Associations in Industrial Groups.**—The figures in the following table refer to Australia at the end of the years 1928 and 1929.

EMPLOYERS' ASSOCIATIONS.—INDUSTRIAL GROUPS.—AUSTRALIA, 1928 AND 1929.

Class.	Number of Associations.		Number of Branches.		Membership.	
	1928.	1929.	1928.	1929.	1928.	1929.
I. Wood, Furniture, etc. ..	20	20	3	3	1,425	1,740
II. Engineering, etc. ..	15	16	12	12	2,874	3,271
III. Food, Drink, etc. ..	108	111	71	82	17,751	19,603
IV. Clothing, Hats, etc. ..	19	18	2	2	2,658	2,323
V. Books, Printing, etc. ..	43	43	2	2	3,435	3,453
VI. Other Manufacturing ..	50	51	1	3	3,458	3,722
VII. Building ..	27	27	19	17	3,770	3,795
VIII. Mining, Quarrying, etc. ..	13	13	..	..	240	245
X. Other Land Transport ..	16	18	21	21	2,525	2,836
XI. Shipping, etc. ..	15	16	6	6	232	241
XII. Pastoral, Agricultural, etc.	35	44	1,772	1,785	69,782	74,592
XIII. Domestic, Hotels, etc. ..	19	21	..	..	1,933	1,869
XIV. Miscellaneous ..	125	129	26	24	17,098	17,652
Total ..	505	527	1,935	1,957	127,181	135,342

The female membership of these associations was 5,929 for 1928, and 5,282 for 1929.

The organization of employers is relatively strongest in the pastoral and agricultural industries and in the manufacture and distribution of articles of food and drink. In the former case there has been considerable growth in organization among small farmers, and in the latter, the number of small shops purveying foodstuffs of which the proprietors are members of grocers', butchers', and other similar associations accounts for the large membership.

4. Federations of Employers' Associations.—In addition to the associations in various industries, there are central associations in each State, to which many of these separate organizations are affiliated. Examples of this kind of association are provided in the Chamber of Manufactures, Chamber of Commerce, and Employers' Federation in each State. Further, these State associations are, in some cases, organized on a federal basis, e.g., there is an Associated Chamber of Manufactures, an Associated Chamber of Commerce, or a Central Council of Employers, to which State branches are affiliated.

The affiliation of these associations is, however, of a very loose nature when compared with that of the Federated Trade Unions. Whereas in the latter case the central body has complete control of its state branches, in the case of the Employers' Associations each state body enjoys complete independence, the central body acting in a more or less advisory capacity only.

The following table gives particulars, so far as can be ascertained, of interstate or federated associations having branches in two or more States from 1925 to 1929 :—

INTERSTATE OR FEDERATED EMPLOYERS' ASSOCIATIONS, 1925 TO 1929.

INTERSTATE OR FEDERAL EMPLOYERS ASSOCIATIONS							Total.
Particulars.	Associations Operating in—						
	2 States.	3 States.	4 States.	5 States.	6 States.		
No. of Associations.							
1925	3	5	4	10	8	30	
1926	4	3	5	8	8	28	
1927	4	1	4	9	14	32	
1928	3	3	3	11	16	36	
1929	3	4	4	10	16	37	
No. of Members.							
1925	3,899	535	634	20,549	25,778	51,395	
1926	534	432	1,861	24,118	25,950	52,895	
1927	352	315	1,655	40,548	37,654	80,524	
1928	205	1,126	208	59,175	41,511	102,225	
1929	201	1,066	594	60,729	43,166	105,766	

The above table shows that associations having 78 per cent. of the total membership (135,342) of employers' organizations are grouped together on an interstate basis.

CHAPTER XIV.

DEFENCE.

§ 1. Military Defence.

1. State Systems.—A detailed historical account of the Australian defence forces prior to Federation will be found in Official Year Book No. 2, pp. 1075–1080. See also Official Year Book No. 12, p. 999.

The strength of the military forces of the States on the 31st December, 1900, (the eve of Federation) was :—New South Wales, 9,338 ; Victoria, 6,335 ; Queensland, 4,028 ; South Australia, 2,932 ; Western Australia, 2,696 ; Tasmania, 2,024 ; total for Australia, 27,353. This total was exclusive of cadets, reservists, and rifle club members.

2. Commonwealth System.—(i) *General.* Under the terms of the Constitution Act 1900, the Commonwealth took over control of defence matters in March, 1901. The growth of the Commonwealth Military Forces may be considered to have taken place in five phases, viz. :—

- (a) The first phase, *i.e.*, the welding together of the military forces of the States into one homogeneous army, was entrusted by the Government in 1902 to Major-General Sir Edward Hutton, K.C.B., K.C.M.G., and a sound foundation was laid, upon which the subsequent organization and training were based.
- (b) The second phase was the introduction of Universal Training in 1911. During the year 1909 a measure providing for universal training was enacted, and the scheme came into force in 1911 after the advice and recommendations of the late Lord Kitchener had been obtained. By the Defence Acts of 1903 and 1904 all male inhabitants between the ages of 18 and 60 years were made liable to serve in Australia with the defence forces in *time of war*. The more recent Acts make training and service compulsory up to the age of 26 years *in time of peace*. By the Act of 1909 the principle of universal liability to training was made law for the first time in any English-speaking community. More detailed reference to these matters will be found in Official Year Book No. 12, p. 999 *et seq.*
- (c) The third phase, Divisional Organization, came into operation from the 1st May, 1921. Under this system a war organization, evolved from the Australian Imperial Force, is applied to peace conditions, with a minimum of permanent staff and forces. Numbers of units and formations were altered to correspond with those of the A.I.F. and every effort was made to maintain the traditions established by those units in the Great War.
- (d) The fourth phase, which was initiated by the Government in 1922, entailed the reduction of the Divisional Organization to a nucleus force.
- (e) The fifth phase, the suspension of all compulsory obligations under Part XII. of the Defence Act and the reconstitution of the forces on a basis of voluntary enlistment, was brought into operation as from 1st November, 1929. The Divisional Organization has been retained, but the peace nucleus has been reduced from 48,000 Citizen Forces and 16,000 Senior Cadets to 35,000 Militia Forces and 7,000 Senior Cadets by reductions in the training establishments of units and by ceasing to maintain certain light horse regiments and infantry battalions.

(ii) *Military Population.* In connexion with the numbers available, the figures of male population are of interest. The total number at cadet age, *i.e.*, between 12 and 18, at the Census of 1921 (4th April) was about 300,000 ; at citizen soldier age, *i.e.*, between 18 and 26, 354,000 ; these latter, with 409,000 at ages between 26 and 35, give 763,000

as the total males at the best period for military service. It is estimated that 529,000 of those available between the ages of 18 and 35 were not married or widowers without children, and 233,000 were married or widowers with children. In addition, there were about 768,000 between the ages 35 and 60.

(iii) *Allotment of Units.* The organization is territorial, and the divisions based upon infantry units. There are 55 battalions, forming 14 brigades. The areas have approximately equal numbers of males of citizen soldier age, and each furnishes a battalion of infantry, and a proportion of other troops.

ALLOTMENTS OF UNITS TO AREAS, 30th APRIL, 1930.

State.	Military District.	Number of Infantry Brigade Areas.	Battalion Areas.									
			Number of Battalion Areas. (a)	Providing the undermentioned Units—								
				Infantry Battalions.	Light Horse Regiments.	Field Artillery Batteries.	Medium Artillery.		Heavy Artillery.		Artillery Survey.	Anti-aircraft Battery.
							Brigade Head-quarters.	Batteries.	Brigade Head-quarters.	Batteries.		
New South Wales ..	2nd	5	18	19	8	18	1	3	1	4	1	1
Victoria ..	3rd	5	18	19	5	17	1	3	1	3	1	..
Queensland ..	1st	2	8	9	4	6	..	..	..	2	..	..
South Australia ..	4th	1	4	4	4	..	..	..	..	1	..	..
Western Australia ..	5th	1	3	3	1	3	..	..	..	3	..	..
Tasmania ..	6th	..	2	2	1	2	..	..	..	1	..	..
Total ..	..	14	53	55	21	50	2	6	2	12	2	1

State.	Military District.	Battalion Areas.													
		Providing the undermentioned Units—													
		Engineers.		Signals.		Tank Corps.	A.A.S.C.				A.A.M.C.		A.A.O.C. Companies.	A.A.V.C. Sections.	
		Field.	For-tres.				Head-quarters Supply Companies.	Head-quarters Horse transport Companies.	Supply Sections.	Horse Transport Sections.	Field Ambulance.	Field Hygiene Sections.			
		Companies.	Troops.	Companies.	Sections.	Troops.	Tank Section.								
New South Wales	2nd	5	3	2	23	5	1	3	3	7	7	7	3	4	4
Victoria ..	3rd	5	3	1	22	5	..	3	3	7	7	3	3	4	4
Queensland ..	1st	2	1	1	6	1	..	1	1	3	3	3	1	1	1
South Australia..	4th	1	1	..	3	1	..	..	..	2	2	2	1	1	1
Western Australia..	5th	1	..	1	4	..	..	..	..	1	1	1	1	..	..
Tasmania ..	6th	1	..	1	4	..	..	..	..	1	1	1	1	..	..
Total ..	..	15	8	6	62	12	1	7	7	21	21	21	10	10	10

(a) Two University battalions are not allotted to any specific battalion area.

(iv) *Strength of Military Forces.* (a) *Districts.* There was little alteration in the numbers serving in the Australian military forces from the institution of the Commonwealth to the year of the introduction of the compulsory training system. From 1913 to 1918, however, the annual increase was considerable. As a result of the International Conference which met at Washington on the 11th November, 1921, it was decided by the Australian Government in 1922 that the universal training law was to be continued, but its operation was to be restricted to the more populous centres and to certain quotas

only. From 1st July, 1922, to 30th June, 1925, training in the Senior Cadets was limited to two quotas instead of four, and in the Citizen Forces to two quotas instead of seven. On 1st July, 1925, Senior Cadet training was reduced to one quota only, while Citizen Force training was increased to three quotas. These conditions remained in force until 1st November, 1929, when the constitution of the forces on a voluntary basis was adopted. During the period last mentioned Senior Cadet training commenced on 1st July of the year in which Senior Cadets reached the age of 17 years, and on 1st July of the following year they were allotted to the Citizen Forces, in which training continued until the 30th June of the year in which they attained the age of 21 years. Notwithstanding the reduction in training, all males residing within 5 miles of a training centre were required to register during the months of January and February of the year in which they reached the age of 14 years. Junior Cadet training of boys of the ages of 12 and 13 years which was in abeyance during the years 1922-23 and 1923-24, was also supervised by the Defence Department during the period 1st July, 1925, to 31st October, 1929.

Under the voluntary enlistment system now in force men from 18 to 40 years of age may be enlisted. The first period of enlistment is for three years, and on its completion, the member concerned may be re-engaged for successive periods of one year until he reaches the age for retirement (48 years). The normal period of training is 16 days per annum (including 8 days in camp of continuous training).

Senior Cadet Corps in which enrolment is voluntary are organized on the following basis:—(a) Regimental detachments—maximum strength 20 per cent. of the establishment of each arm or service of the Militia Forces; and (b) Detachments consisting of pupils attending approved educational establishments. The ages for enrolment in the regimental detachments are 16 and 17 years, and in the school detachments over 14 years.

TRAINING STRENGTH OF MILITARY FORCES, 1901, 1913, AND 1922 TO 1930.

(a) District.	1901. (b) 1/3/01.	1913. 30/6/13.	1922. 31/12/22.	1925. 1/2/25.	1926. 1/8/26.	1929. 1/2/29.	1930. 30/4/30.
Hd.-Qrs.(c)	..	277	499	130	158	197	166
1st (Qld.)	..	4,310	4,319	4,263	4,908	5,610	3,325
2nd (N.S.W.)	..	9,772	12,105	14,561	17,249	18,825	10,810
3rd (Vict.)	..	7,011	10,840	11,117	11,847	14,347	8,452
4th (S. Aus.)	..	2,956	3,228	3,452	3,772	4,235	1,946
5th (W. Aus.)	..	2,283	1,685	2,018	2,205	2,399	1,753
6th (Tas.)	..	2,554	1,777	1,190	1,252	1,338	1,002
Total	..	28,886	34,537	37,156	38,889	44,634	27,454

(a) Approximately coterminous with boundaries of States. (b) Date of taking over the military forces from States by Commonwealth. (c) Including cadets at Royal Military College of Australia, and Staff Corps Officers abroad, unallotted, or training with other Commonwealth Departments.

(b) *Various Arms.* The numbers of the different arms of the service on the 30th April, 1930, were as follows:—

ARMS OF THE AUSTRALIAN MILITARY FORCES, ACTIVE LIST, 30th APRIL, 1930.(a)

Head-quarters Staffs	..	149	Signals	..	1,136
Staff Corps	..	277	Infantry	..	11,618
Corps of Staff Cadets	..	66	Tank Corps	..	34
Instructional Corps	..	570	Army Service Corps	..	1,276
Light Horse	..	3,772	Army Medical Corps	..	931
Royal Australian Artillery	..	413	Army Ordnance Corps (b)	..	212
Field Artillery	..	4,033	Army Veterinary Corps	..	109
Garrison Artillery	..	1,213	Engineer and Railway Staff	..	..
Royal Australian Engineers	..	146	Corps	..	62
Field Engineers	..	1,210	Provost Staff	..	13
Fortress Engineers	..	214	Total	..	27,454

(a) Excluding civilian staff.

(b) Includes Ordnance Officers and Artificers.

(c) *Classification of Land Forces.* The following table shows the strength of the land forces in each State, classified according to nature of service, on the 30th April, 1930 :—

**DISTRIBUTION OF LAND FORCES,(a) ACTIVE AND RESERVE LISTS,
30th APRIL, 1930.**

Branch of Service.	Army Head-quarters.	1st Military District. (Qld.)	2nd Military District. (N.S.W.)	3rd Military District. (Vic.)	4th Military District. (S. Aus.)	5th Military District. (W. Aus.)	6th Military District. (Tas.)	Total.
Permanent Forces ..	(b) 156	149	609	484	88	118	65	1,609
Militia Forces ..	10	3,176	10,201	7,968	1,858	1,635	937	25,785
Unattached List of Officers ..	7	32	135	113	17	41	11	356
Reserve of Officers ..	..	947	2,833	2,594	733	655	284	8,046
Chaplains ..	6	52	122	117	35	25	15	372
Total ..	179	4,356	13,900	11,276	2,791	2,474	1,312	36,223

(a) Excluding civilian staff. (b) Including staff and cadets at Royal Military College of Australia and Staff Corps Officers unallotted, stationed abroad, and training with other Commonwealth Departments.

(d) *Numbers who served under Compulsory Provisions.* (1) *General.* The following tables show the numbers registered and training under the compulsory system, distinguishing Citizen Forces and Senior Cadets :—

(2) *Citizen Forces 1908, 1909, and 1910 Quotas.* Registrations under these quotas at the 30th June, 1929, are given hereunder :—

**UNIVERSAL TRAINING.—CITIZEN FORCES REGISTRATIONS, QUOTAS IN TRAINING
(1908, 1909 AND 1910 QUOTAS), AT 30th JUNE, 1929.**

Military Formations.	1908 Quota.	1909 Quota.	1910 Quota.	Total.
1st Division (N.S.W.) ..	3,997	3,350	3,638	10,985
2nd Division (N.S.W.) ..	7,521	6,055	6,809	20,385
3rd Division (Vic.) ..	5,518	4,602	5,109	15,229
4th Division (Vic.) ..	3,050	2,237	2,457	7,794
11th Mixed Brigade (Q'land) ..	4,093	3,224	3,405	10,722
Field Troops, 4th M.D. (S.A.) ..	3,032	2,237	2,430	7,749
Field Troops, 5th M.D. (W.A.) ..	1,788	1,462	1,529	4,779
Field Troops, 6th M.D. (Tas.) ..	1,055	595	710	2,360
5th District Base (W.A.) ..	39	28	44	111
Total ..	30,093	23,890	26,131	80,114

(3) *Registrations, 1903 to 1907 Quotas.* Figures relating to these quotas have been included in the next table :—

CITIZEN FORCES.—REGISTRATIONS, QUOTAS NOT IN TRAINING (1903 TO 1907 QUOTAS), AT 30th JUNE, 1929.(a)

Military Districts.	Total Registrations in Training Areas.					Total.
	Quota, 1903.	Quota, 1904.	Quota, 1905.	Quota, 1906.	Quota, 1907.	
1st (Q'land) ..	3,673	4,154	4,163	4,212	4,307	20,509
2nd (N.S.W.) ..	10,968	12,052	11,962	12,474	12,252	59,708
3rd (Vic.) ..	8,359	9,340	9,354	9,338	9,155	45,546
4th (S.A.) ..	2,874	3,261	2,868	2,950	2,850	14,803
5th (W.A.) ..	1,989	2,095	2,026	1,777	1,962	9,849
6th (Tas.) ..	1,204	1,300	1,294	1,163	1,103	6,064
Total ..	29,067	32,202	31,667	31,914	31,629	156,479

(a) Latest particulars available, as no training is required of these quotas.

(4) *Exemptions and Missing Trainees.* Particulars for the 1908, 1909, and 1910 quotas are given hereunder :—

CITIZEN FORCES.—EXEMPTIONS AND MISSING TRAINEES, QUOTAS IN TRAINING.
(1908, 1909, AND 1910 QUOTAS), 30th JUNE, 1929.

Military Formations.	Exemptions.				Missing Trainees.
	1908 Quota.	1909 Quota.	1910 Quota.	Total.	1908, 1909, and 1910 Quotas.
1st Division (N.S.W.)	2,319	1,547	1,541	5,407	106
2nd Division (N.S.W.)	4,959	3,299	3,085	11,343	444
3rd Division (Vic.)	3,312	2,200	2,199	7,711	459
4th Division (Vic.)	2,060	1,201	1,193	4,454	226
11th Mixed Brigade (Q'land) ..	2,809	1,906	1,914	6,629	94
Field Troops, 4th M.D. (S.A.) ..	1,995	1,256	1,216	4,467	39
Field Troops, 5th M.D. (W.A.) ..	1,202	872	744	2,818	25
Field Troops, 6th M.D. (Tas.) ..	774	369	369	1,512	11
5th District Base (W.A.)	23	11	13	47	..
Total	19,453	12,661	12,274	44,388	1,404

(5) *Senior Cadets—Registrations, etc.* Registrations and numbers in training from the 1911 to 1915 quotas at 30th June, 1929, are shown in the next table :—

SENIOR CADETS.—REGISTRATIONS AND NUMBER ACTUALLY IN TRAINING,
30th JUNE, 1929 (1911 TO 1915 QUOTAS).

Military Formations.	Total Registrations—Senior Cadets.						Number actually Training—Senior Cadets.
	1911 Quota.	1912 Quota.	1913 Quota.	1914 Quota.	1915 Quota.	Total. (a)	1911 Quota.
1st Division (N.S.W.) ..	3,760	3,848	4,227	4,416	3,712	16,251	2,334
2nd Division (N.S.W.) ..	7,174	6,804	7,304	7,225	6,344	28,507	4,082
3rd Division (Vic.) ..	5,671	5,971	6,023	5,945	5,255	23,610	3,479
4th Division (Vic.) ..	2,697	2,600	3,160	3,241	2,603	11,698	1,563
Field Troops, 4th M.D. (S.A.)	2,694	2,646	3,023	3,123	2,579	11,486	1,523
11th Mixed Brigade (Q'land)	3,403	3,729	3,848	4,147	3,620	15,127	1,509
Field Troops, 6th M.D. (Tas.)	663	799	894	986	805	3,342	328
Field Troops, 5th M.D. (W.A.)	1,573	1,626	1,834	1,842	1,515	6,875	880
5th District Base (W.A.) ..	43	37	53	48	40	181	22
Total ..	27,678	28,060	30,366	30,973	26,473	117,077	15,720

(a) Does not include 1915 Quota, which was not liable for training until 1st July, 1929.

(6) *Senior Cadets—Exemptions and Missing Trainees.* Figures regarding these at 30th June, 1929, are shown below :—

SENIOR CADETS.—EXEMPTIONS AND MISSING TRAINEES, 30th JUNE, 1929.

Military Formations.	Exemptions, 30th June, 1929.					Missing Trainees.
	1911 Quota.	1912 Quota.	1913 Quota.	1914 Quota.	Total.	
1st Division (N.S.W.) ..	1,383	1,138	104	50	2,675	45
2nd Division (N.S.W.) ..	2,983	2,213	182	90	5,468	179
3rd Division (Vic.) ..	2,081	1,832	52	30	3,995	357
4th Division (Vic.) ..	1,085	944	71	36	2,136	53
Field Troops, 4th M.D. (S.A.)	1,164	930	92	37	2,223	17
11th Mixed Brigade (Q'land)	1,862	1,750	259	136	4,007	103
Field Troops, 6th M.D. (Tas.)	329	290	20	21	660	13
Field Troops, 5th M.D. (W.A.)	683	613	27	16	1,339	10
5th District Base (W.A.) ..	21	3	2	..	26	..
Total	11,591	9,713	809	416	22,529	777

(7) *Citizen Forces—Medical Examinations.* The following table shows the results of examinations of the 1911 quota at 30th June, 1929 :—

CITIZEN FORCES.—MEDICAL EXAMINATIONS, 1911 QUOTA, YEAR ENDED 30th JUNE, 1929.

Military Formations.	Number of Examinations Carried Out. (1)	Fit. (2)	Temporarily Unfit. (3)	Unfit (A.M.R. and O. 793). (4)	Unfit at Senior Cadets Examinations and Relieved from Attendance at Citizen Forces Examination. (5)	Unfit (other than those in Columns (4) and (5)). (6)
1st Division (N.S.W.) ..	3,134	2,327	81	..	418	308
2nd Division (N.S.W.) ..	6,182	4,063	530	1	998	590
3rd Division (Vic.) ..	4,982	3,476	452	19	502	533
4th Division (Vic.) ..	2,212	1,560	61	11	228	352
Field Troops, 4th M.D. (S.A.)	2,254	1,511	137	12	304	290
11th Mixed Brigade (Q'land)	2,585	1,509	202	17	457	400
Field Troops, 6th M.D. (Tas.)	457	324	91	1	20	21
Field Troops, 5th M.D. (W.A.)	1,203	880	115	9	54	145
5th District Base (W.A.) ..	26	22	2	..	2	..
Total	23,035	15,672	1,671	70	2,983	2,639

The percentages of fit examinees in military formations, in the same order as shown above, were 74.25, 65.72, 69.77, 70.52, 67.04, 58.38, 70.90, 73.15 and 84.62; and for all formations combined, 68.04.

(v) *Administration and Instruction.* The staff provided for the administration and training of the various arms consists of 277 officers (Staff Corps), 59 quartermasters, and 511 warrant and non-commissioned officers (Australian Instructional Corps).

(vi) *Royal Military College, Duntroon.* This College was established at Duntroon in the Federal Capital Territory for the purpose of providing trained officers for the permanent forces. Admission is by open competitive examination, a definite number of vacancies being allotted to each State on a population basis. Further particulars respecting the College are given on page 915 of Official Year Book No. 15. On 30th April, 1930, the staff numbered 35—military, 23; and civil, 12. The cadets in training at the same date numbered 66.

(vii) *Railways and Defence.* A War Railway Council, consisting of military and railways officers, was instituted in 1911. Its chief duties are to furnish advice and information regarding railway transport for military purposes, and to secure co-operation between the Defence Department and the Railway Departments in regard to concentration and mobilization of troops. To prevent delay in the transport of troops, particularly that caused by the transshipment of baggage and implements of war, the Council has recommended the adoption of a uniform railway gauge on lines linking up the States' capitals. An Engineer and Railway Staff Corps has been instituted, and numbered 62 officers on 30th April, 1930. Fuller details will be found in Official Year Book No. 6, pp. 1070–1.

(viii) *Rifle Clubs.* On the 30th June, 1929, there were 1,137 rifle clubs with a membership of 42,045, and 78 miniature rifle clubs having a membership of 2,761. Members of rifle clubs must fire an annual course of musketry, but do not undergo any systematic drill.

The administration of rifle clubs is under the control of the Secretary for Defence, and rifle clubs do not form part of the military organization. Government grants however are made for the construction and maintenance of rifle ranges, etc., and 200 rounds of ammunition are issued free annually to each efficient member.

§ 2. Naval Defence.

1. *State Systems.*—Information regarding naval defence systems prior to 1901 will be found in Official Year Book No. 12, p. 1011, but considerations of space preclude its insertion in the present volume.

2. *The Present System.*—(i) *General.* An outline of the development of Australian naval policy was given in Official Year Book No. 3, pp. 1060–61, and No. 12, p. 1012. Some account of the building of the Australian Fleet, the proposed and modified cost thereof, the compact with the Imperial Government, etc., appears in Official Year Book No. 15, pp. 921 *et seq.* Up to the 30th June, 1929, the expenditure on construction amounted to £13,512,948.

The Washington Conference of 1921 has had a marked effect on naval defence schemes, and all warship building and naval base construction were for a time suspended. The Fleet personnel was reduced from 4,843 in 1921 to 3,500 in 1923, and the ships in commission were reduced from 25 to 13. H.M.A.S. *Australia* was sunk in accordance with the provisions of the Washington Treaty on 12th April, 1924.

In 1925 the Commonwealth Government, however, decided to build two cruisers of 10,000 tons (the maximum size at present allowed for new construction under the Washington Naval Treaties), two ocean-going submarines, and a seaplane-carrier. The two cruisers, which were named *Australia* and *Canberra*, were commissioned in 1928, H.M.A.S. *Australia* becoming the Flagship of the Australian Squadron. The two submarines, *Otway* and *Oxley*, which were built in England, arrived at Thursday Island on 25th January, 1929. The seaplane-carrier *Albatross*, built at Cockatoo Island Dockyard, Sydney, by the Commonwealth Shipping Board, was commissioned on 23rd January, 1929.

To ensure closer co-operation with the Royal Navy, arrangements have been concluded with the Admiralty for the periodical exchange of a cruiser, thus giving an opportunity for Australian sailors to gain experience in fleet exercises on a large scale.

The British Admiralty have, in addition, lent to the Royal Australian Navy the sloop *Silvio*, which was refitted in England as a surveying ship, and renamed H.M.A.S. *Moresby*. This vessel has been principally employed in surveying the Great Barrier

Reef. In 1926 the Commonwealth Government entered into an agreement with the New South Wales Government whereby the latter, in consideration of the payment of a subsidy of £135,000, constructed at Walsh Island, Newcastle, a floating dock capable of lifting 15,000 tons. This dock, which is capable of docking the new 10,000-ton cruisers, has now been completed.

(ii) *Naval College.* A naval college was established at Geelong in 1913, and was transferred in 1915 to Captain's Point, Jervis Bay, New South Wales. The course is similar to that carried out in naval colleges in England. In February, 1930, there were 51 cadet midshipmen under training. A boy who reaches the age of thirteen years during the calendar year in which the entrance examination is held is eligible to compete provided he is the son of natural-born or naturalized British subjects. From amongst those qualified the selection committee chooses the number required. The Commonwealth Government bears the whole expense of uniforms, victualling, travelling, as well as that of the educational course. Altogether 173 officers who have passed through the college are now serving with the Fleet. The college was transferred in 1930 to the Flinders Naval Base.

(iii) *Training Establishments.* For the time being seamen recruits from 17 to 21 years of age receive their preliminary training at the Naval Depot, Westernport, where, in addition to the new entry school, instruction is given in Gunnery and Torpedo, Signals and Wireless Telegraphy, Engineering, etc. The entry and training of boys has been suspended for the present.

(iv) *The Naval Station.* A description of the limits of the Australian Naval Station is contained in previous issues of the Official Year Book (see No. 18, pp. 608-9), but lack of space precludes its repetition in the present issue. The limits have recently been altered slightly.

(v) *Vessels.* A list of the vessels of the Royal Australian Navy is given hereunder:—

SHIPS OF THE ROYAL AUSTRALIAN NAVY, MAY, 1930.

Vessel.	Description.	Displacement.	Power.
		Tons.	H.P.
IN COMMISSION—			
<i>Albatross</i> ..	Seaplane Carrier	6,000	12,000
<i>Anzac</i> ..	Flotilla Leader	1,660	36,000
<i>Australia</i> ..	Cruiser	10,000	80,000
<i>Canberra</i> ..	"	10,000	80,000
<i>Cerberus</i> ..	Motor Boat	61	220
<i>Penguin</i> ..	Submarine Depot Ship and General Repair	3,460	3,500
IN RESERVE—			
<i>Adelaide</i> ..	Cruiser	5,500	25,000
<i>Brisbane</i> ..	"	5,400	25,000
<i>Geranium</i> ..	Sloop	1,250	2,000
<i>Mallow</i> ..	"	1,200	1,800
<i>Marguerite</i> ..	"	1,250	2,000
<i>Moresby</i> ..	"	1,320	2,500
<i>Otway</i> ..	Submarine	1,400	..
<i>Oxley</i> ..	"	1,400	..
<i>Stalwart</i> ..	Destroyer	1,075	27,000
<i>Success</i> ..	"	1,075	27,000
<i>Swordsmen</i> ..	"	1,075	27,000
<i>Tasmania</i> ..	"	1,075	27,000
<i>Tattoo</i> ..	"	1,075	27,000
FLEET AUXILIARIES—			
<i>Biloela</i> ..	Fleet Collier	5,700	2,300
<i>Kurumba</i> ..	Fleet Oiler	3,970	2,000

(vi) *Naval Forces.* Besides the sea-going forces, there is a R.A.N. Reserve, which is composed of Citizen Naval Forces. The personnel of the sea-going forces, which was originally largely composed of Imperial officers and men, is now 95 per cent. Australian. The strength of the naval forces is given hereunder :—

**STRENGTH OF NAVAL FORCES (PERMANENT AND RESERVES),
15th FEBRUARY, 1930.**

Description of Force.	Numbers Borne.		
	In Training.	Officers.	Men.
Royal Australian Navy (Sea-going)	442	3,760
Royal Australian Naval Auxiliary Services	42	180
Cadet Midshipmen undergoing training at R.A.N. College ..	51	..	..
Royal Australian Naval Reserve (Sea-going)	43	..
Royal Australian Fleet Reserve	121
Royal Australian Naval Reserve	217	4,797
Royal Australian Naval Volunteer Reserve	44	3

§ 3. Air Defence.

1. **General.**—A statement in regard to the preliminary steps taken in connexion with the development of air defence will be found in Official Year Book No. 18, p. 610.

The Royal Australian Air Force is administered by a Board consisting of three Air Force members and a Finance member. To this Force is entrusted the air defence of Australia, the training of personnel for co-operation with the naval and military forces, and the refresher training of pilots engaging in civil aviation. The present establishment of the Force includes the following units :—(a) Head-Quarters Royal Australian Air Force, with representation at the Air Ministry in London ; (b) a Flying Training School ; (c) a Stores Depot ; and (d) two service squadrons and one flight.

2. **Establishment.**—The present approved establishment of the Permanent Air Force is 104 officers and 788 airmen, and of the Citizen Air Force, 60 officers and 290 airmen.

3. **Aerial Routes.**—Aerodromes and alighting sites have been prepared between the capital cities and on certain parts of the coast for service and civil purposes. The total number prepared to date is 220.

4. **Civil Aviation.**—Details regarding the formation and activities of the Civil Aviation Department will be found in Chapter VII., Section D. Aircraft.

§ 4. Expenditure on Defence.

The following table shows defence expenditure, exclusive of war services, in 1901–2 and during each of the last five years. Details of the expenditure of the Defence Department and the cost of the war, repatriation, and war services are given in Chapter VIII.—Finance.

DEFENCE EXPENDITURE (EXCLUDING WAR SERVICES).—AUSTRALIA,
1901-2 TO 1929-30.

Item.	1901-2.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30. (a)
	£	£	£	£	£	£
Central Administration	5,594	28,311	29,603	26,700	27,901	24,488
Naval	178,819	2,620,985	2,765,033	2,597,864	2,395,910	2,198,891
Military	732,626	1,547,819	1,526,108	1,494,201	1,465,718	1,282,171
Air Services—						
R.A. Air Force .. ..	..	429,373	571,769	516,639	549,126	523,150
Civil Aviation .. ..	..	113,588	111,669	113,368	97,499	106,000
Munitions Supply Branch ..	..	557,548	433,338	461,638	383,324	338,800
Rifle Clubs and Associations ..	41,653	48,920	48,880	47,699	47,851	40,000
Special Appropriations—						
Naval Construction .. ..	..	946,859	2,262,199	2,060,586	1,349,819	360,000
Survey of Gt. Barrier Reef ..	..	112,117	26,903	46,217	61,906	39,000
Reconditioning Equipment and Purchase of Aircraft Equip- ment .. ..	..	25,327	115,436	7,076	115,315	22,000
Development of Civil Aviation ..	..	..	..	13,722	42,113	100,000
	958,692	6,430,847	7,890,938	7,385,710	6,536,482	5,034,500

(a) Estimated.

In addition to the above, expenditure on war services, naval and military only, directly under the control of the Defence Department amounted in 1928-29 to £107,521 from Revenue, while the estimated expenditure in 1929-30 was £118,036 from Revenue.

The total cost of war services including interest, sinking fund, war pensions, repatriation, etc., amounted to £30,097,751 from Revenue and £1,660,479 from Loans during 1928-29.

§ 5. Munitions Supply.

1. *General.*—A statement dealing with the powers and functions of the Munitions Supply Board is given on p. 612 of Official Year Book No. 18, but limits of space preclude its repetition in the present volume.

2. *Factories.*—(1) *General.* The Explosives Factories at Maribyrnong, Victoria, which manufactured explosives for cartridges and artillery ammunition, aeroplane dopes, and special paints, were established in 1911. The staff at 30th June, 1929, numbered 147.

The Acetate of Lime Factory, established at Bulimba, Brisbane, in September, 1918, provides acetate of lime (a raw material used in the manufacture of acetone) and is now being held in reserve. Employees at 30th June, 1929, numbered 4.

The Clothing Factory at Melbourne, Victoria, which had a staff of 243 employees on 30th June, 1929, commenced output in July, 1912, and since that date has been able to supply the whole of the uniform clothing required for the Defence forces, and the Post-master-General's Department. It also supplies clothing required by State Departments and local public bodies.

The Small Arms Factory at Lithgow, New South Wales, which was opened on 1st June, 1912, and delivered the first instalment of Australian arms in May, 1913, had on its pay roll on 30th June, 1929, 359 employees. Rifles are being produced, and the manufacture of pistols and machine guns has been undertaken.

On 1st January, 1921, by virtue of an agreement with the Colonial Ammunition Company Limited, the Defence Department entered into possession on lease of the Company's works at Footscray, Victoria, but on 1st January, 1927, they were purchased by the Commonwealth Government. As from the 1st July, 1928, this establishment, known as the Small Arms Ammunition Factory, was amalgamated with the Gun Ammunition Factory, and this group is now known as the Ammunition Factories, where in addition to rifle and pistol ammunition, big gun fuses and cartridge cases are also produced. A rolling mill for brass and other non-ferrous metals has been included. The staff at 30th June, 1929, numbered 241.

At the Ordnance Factory, Maribyrnong, Victoria, established in 1924, provision is made for the production of guns, shells, gun carriages and military vehicles. This group includes a well equipped forge and woodworking and electrical shop. The number of employees at 30th June, 1929, was 162.

(ii) *Investment in Factories.* Up to 30th June, 1929, the amount invested in lands, buildings, machinery and plant, factory fittings and furniture in connexion with the factories now in operation was approximately as follows:—Small Arms Factory, £489,843; Explosives Factories, £523,064; Clothing Factory, £8,992; Acetate of Lime Factory, £91,878; Ammunition Factories, £450,910; and Ordnance Factories, £489,320.

§ 6. Remount Depot.

Information in regard to the establishment of this branch of activity is contained in previous issues of the Official Year Book (see No. 18, p. 613). When war was declared in 1914 little difficulty was experienced by the Remount Service in coping with the enormous task of obtaining and training horses for the mounted units of the A.I.F. and in providing for the shipment of horses to Egypt and India as required.

§ 7. Australian Contingents.

1. *General.* In previous issues of the Year Book an account was given of the composition, etc., of the Australian contingents dispatched for service in the New Zealand and Sudan Campaigns, in South Africa, China, and the Great War of 1914-18 (see Official Year Book No. 12, pp. 1019 *et seq.*).

2. *Australian Troops (Great War).*—Particulars of the enlistments, casualties, honours and decorations won, and engagements of the Australian Imperial Force during the Great War were given in Official Year Book No. 16, pp. 628 *et seq.* Limits of space, however, preclude the repetition of this information in the present volume.

§ 8. War Gratuity.

Reference was made in preceding Year Books (see No. 15, p. 930) to the bonus payable in accordance with the War Gratuity Acts of 1920 as a war service gratuity to soldiers and sailors who served in the Great War. Owing to limitations of space this information cannot be repeated, but it may be noted that the gratuity was paid in Treasury Bonds, maturing not later than 31st May, 1924, and bearing interest at 5½ per cent. In necessitous cases payment was made in cash when desired by the person entitled. The first gratuities were made available about the beginning of June, 1920. The total amount paid to 30th June, 1929, was £27,483,672.

§ 9. Special Defence Legislation.

Information regarding special defence legislation enacted by the Commonwealth Government during the War was given in Official Year Book No. 15, p. 930. It may be pointed out here that the War Precautions Act Repeal Act of 1920 repealed the Act 1914-18, but a limited number of matters dealt with under the original Act are now provided for under the War Precautions Act Repeal Act of 1920-28 or by regulations made thereunder.

§ 10. Repatriation.

1. *General.*—An outline of the activities leading up to the formation of the Commonwealth Department of Repatriation was given in Official Year Book No. 15, p. 931, but limits of space preclude its repetition in the present volume. Some account was given also in the Year Book referred to, and in subsequent issues, of the policy and activities of the Department generally, while detailed information was incorporated in regard to such matters as sustenance rates and pensions to soldiers and

dependents. (See Official Year Book 17, pp. 598 to 601.) During the year ended 30th June, 1928, sustenance rates were amended to bring them into line with war pensions rates, and the scale of rates in respect to war pensions was amplified by providing for an allowance to the third or subsequent child at such a rate as will provide, together with pension in respect of that child, a sum of 15s. per fortnight.

The main activities of the Repatriation Commission at 30th June, 1929, were confined to the grant, review and assessment of war pensions, medical treatment, the renewal and repair of artificial replacements and surgical appliances, the grant and review of living allowances, and the administration of the Soldiers' Children Education Scheme.

2. *Pensions*.—The pensions in force on the 30th June, 1929, numbered 272,631, and the amount expended thereon during the twelve months ending 30th June, 1929, was £7,734,921.

On the 1st June, 1929, the following appeal tribunals were created:—(a) *War Pensions Entitlement Appeal Tribunal* consisting of a chairman and two members to hear and decide any appeal against a decision of the Repatriation Commission, by or on behalf of ex-members of the Forces or their dependents that an incapacity of an ex-member or death arose out of war service; and (b) *Two War Pensions Assessment Appeal Tribunals* consisting, in each instance, of a chairman and two medical members selected from a panel approved by the Minister to hear and decide an appeal against a current assessment of war pension made by the Repatriation Commission in respect of an incapacity of an ex-member of the Forces which has been accepted as arising out of war service.

3. *Summary of Activities*.—The following is a summary of the work of the Department from 8th April, 1918, to 30th June, 1929:—

(i) *Employment*. Number of applications, 252,902; number of positions filled, 132,832.

(ii) *Vocational Training*. Number of men completed training, 27,685; number in training, 15.

(iii) *Assistance other than Vocational Training and Employment*. Applications received, 766,888; applications approved, 674,271.

(iv) *Soldiers' Children Education Scheme*. From the inauguration of the scheme in February, 1921, up to 30th June, 1929, 12,731 applications for assistance had been received. Of these 11,483 had been approved, of which 4,059 recipients of the benefits had completed their training, 6,035 were undergoing training, 58 applications were pending, and the remainder had been refused or withdrawn.

Up to 30th June, 1929, the expenditure was £896,865.

(v) *Assistance Granted*. The total expenditure incurred during the period from 8th April, 1918, to 30th June, 1929, was £16,759,543, of which £9,370,956 represented gifts, £1,675,212 loan, and £5,713,375 general expenditure. Of the total the largest amounts were absorbed by vocational training, with £5 millions, and expenses of providing employment, £2½ millions.

(vi) *Medical Treatment*. At 30th June, 1929, there were 1,561 in-patients and 8,664 out-patients receiving medical treatment. The expenditure to this date was £4,647,089.

4. *Settlement of Soldiers on the Land*.—At the Premiers' Conference in Melbourne in 1917 it was agreed that the States should undertake the work of settling on the land returned soldiers and munition and war workers, but that the Commonwealth should finance them for this purpose.

The original arrangement provided that the Commonwealth should take the responsibility of finding up to £500 per settler as working capital for improvements, implements, seed, etc., an amount which was subsequently increased to £625 per settler,

together with £375 per settler for resumptions and works incidental to land settlement approved by the Commonwealth. Particulars of the advances to the States are shown in the following table :—

ADVANCES TO STATES FOR SOLDIER SETTLEMENT, AT 30th JUNE, 1929.

State.	No. of Settlers.	Advances agreed upon.	Advanced during 1928-29.	Advanced to 30th June, 1929.	Advances outstanding 30.6.29.
	No.	£	£	£	£
New South Wales ..	8,405	12,254,191	..	9,826,203	9,805,983
Victoria ..	11,000	15,708,514	..	11,968,176	11,794,075
Queensland ..	3,893	3,290,789	..	2,717,697	2,700,583
South Australia ..	5,000	6,265,471	..	2,857,780	2,833,005
Western Australia ..	5,186	6,278,750	..	5,463,782	5,431,202
Tasmania ..	2,821	3,521,234	..	2,168,303	2,129,563
Total ..	36,310	47,318,949	..	35,001,941	34,694,411

Prior to the occupancy of the land, the Repatriation Department was empowered to pay sustenance for a limited period, subject to certain conditions, also for 6 months during the first 2 years of occupancy while awaiting production.

5. **Conspectus of State Laws affecting Settlement of Returned Soldiers on the Land.**—In Official Year Book No. 13, pp. 1018 *et seq.*, will be found a table giving particulars of the laws of the various States relating to returned soldiers' land settlement.

Later modifications have been made with a view to simplifying procedure and liberalizing the conditions under which holdings may be acquired.

§ 11. War Service Homes.

The operations of the War Service Homes Commission at 31st March, 1930, may be briefly set out as follows :—Total applications approved, 41,066; expenditure on provision of homes, purchase of land for future use, etc., £28,342,293; 20,816 houses had been completed; 33 homes had been enlarged; 221 houses were in course of construction; and 436 building applications had been approved in respect of which building operations had not been commenced.

In addition, the Commission had purchased on behalf of eligible applicants 12,851 already-existing properties, and had taken over mortgages existing on 2,526 dwelling-houses. Homes are insured under a comprehensive policy, the total insurances in force, including cover notes, amounting to £16,070,815. The total receipts received by the Commission to 31st March, 1930, were £15,015,185, of which £5,137,840 was paid to the National Debt Sinking Fund. Only one per cent. of repayment arrears was due to the Commission on 31st March, 1930.

The foregoing figures include the operations of the State Bank of South Australia and the State Savings Bank of Victoria, which are now carrying out the provisions of the War Service Homes Act in their respective States, the Commonwealth's obligations being to make available to the Government in each State as a loan the funds required for the purpose.

CHAPTER XV.

THE TERRITORIES OF THE COMMONWEALTH.

GENERAL.

The Territories under the control of the Commonwealth are :—The Northern Territory; the Federal Capital Territory; Papua (formerly British New Guinea); Norfolk Island; the Territory of New Guinea (by Mandate of the League of Nations); Nauru (under joint Mandate of the Commonwealth, Great Britain and New Zealand).

Information regarding forms of government, etc., will be found in Official Year Book No. 22, pages 587–588.

THE NORTHERN TERRITORY.

§ 1. Area and Population.

1. *Introductory.*—Upon the extension of New South Wales westward to the 129th meridian in 1827, the Northern Territory was incorporated in that colony and in 1863 was annexed by Royal Letters Patent to the province of South Australia. With the adjacent islands, it was transferred to the Commonwealth on 1st January, 1911. The total area is 523,620 square miles, or 335,116,800 acres.

2. *Population.*—(i) *Europeans.* At the census taken in 1881 there were only 670 Europeans in the Territory. The total increased slowly, reaching its maximum in 1919 with 3,767 persons. At the census of 1921 the white population had decreased to 2,459. In 1929 it was about 3,250.

(ii) *Asiatics.* With the exception of a few Japanese, Filipinos and others, the Asiatics in the Northern Territory consist mainly of Chinese. These numbered at one time over 4,000, but have gradually dwindled and now barely exceed 700. (See Year Book No. 22, p. 589).

(iii) *Total Population.* The highest recorded population of all races, except aborigines, was 7,533 in 1888, while at the end of 1929 it was 4,470. The estimated population for the last five years is given in the following table :—

NORTHERN TERRITORY.—POPULATION (EXCLUSIVE OF ABORIGINALS), 1925 TO 1929.

Year.	Males.	Females.	Total.
1925	2,550	1,106	3,656
1926	2,773	1,125	3,898
1927	3,137	1,224	4,361
1928	2,739	1,243	3,982
1929	2,945	1,525	4,470

The Census population (4th April, 1921) was 2,821 males, 1,046 females, total 3,867.

(iv) *Movement of Population.* The following is a summary of movement of population in 1929 (excluding overland migration) :—

NORTHERN TERRITORY.—MOVEMENT OF POPULATION, 1929.

Immigration ..	1,079	Emigration ..	579	Excess of immi- gration over emigration ..	500
Births	53	Deaths	65	Excess of births over deaths ..	—12
Increase ..	1,132	Decrease ..	644	Net Increase ..	488

The immigration and emigration of the Territory for the five years ending 1929 are shown in the following table :—

NORTHERN TERRITORY.—IMMIGRATION AND EMIGRATION, 1925 TO 1929.

Year.	Immigration.	Emigration.
1925	567	511
1926	731	498
1927	1,163	692
1928	710	1,101
1929	1,079	579

(v) *The Aborigines.* A special article contributed by Dr. W. Ramsay-Smith on the subject of the Australian aborigines, was incorporated in Year Book No. 3 (pp. 158–176). The chapter “Population,” in Year Book No. 17, contained information regarding the number and distribution of aborigines and the measures taken by the States (in the case of the Northern Territory, by the Commonwealth) to protect and preserve the aborigines. In the Northern Territory large numbers of the aborigines are still outside the influence of Europeans. The total number of full-blood and half-caste aborigines in the Territory at 30th June, 1929, was estimated at about 21,700, of whom 2,625 were in regular employment. (See also Chapter XXIV.—Population, hereinafter.)

§ 2. Legislation and Administration.

On 1st January, 1911, the Territory was transferred by South Australia to the Commonwealth. The terms were outlined in Year Book No. 15, p. 940. Regarding administration, see Year Book No. 22, p. 590. The Territory elects a member to the House of Representatives, who can take part in the debates, but may not vote.

§ 3. Physiography.

1. *Tropical Nature of the Country.*—The Territory is within the torrid zone, with the exception of a strip $2\frac{1}{2}$ degrees wide, which lies south of the Tropic of Capricorn.

2. *Contour and Physical Characteristics.*—The low flat coast line seldom reaches a height of 100 feet. Sandy beaches and mud flats, thickly fringed with mangroves, prevail. Sandstone, marl, and ironstone form the occasional cliffy headlands. The sea frontage of more than 1,000 miles is indented by bays and inlets, and intersected by numerous rivers, many of which are navigable for considerable distances from their estuaries.

The principal features of the coast line are enumerated in Year Book No. 1, p. 66; the rivers in Year Book No. 2, p. 76; the mountains in Year Book No. 3, p. 67; the lakes in Year Book No. 4, p. 77; the islands in Year Book No. 5, pp. 71, 72, and the mineral springs in Year Book No. 6, p. 65.

Inland, the country generally is destitute of conspicuous landmarks. From the coast there is a general rise southwards to the vicinity of the 17th or 18th parallel of south latitude, where the higher lands form the watershed between the rivers that flow northwards to the sea and those that form the scanty supply of the interior systems. Towards the centre of the continent the land over a wide area is of considerable elevation, and there are several mountain ranges, generally with an east and west trend.

§ 4. Climate, Fauna and Flora.

1. *The Seasons.*—There are two main climatic divisions—the wet season, November to April, and the dry season, May to October, with uniform and regular changes of weather. Nearly the whole of the rainfall occurs in the summer months. Fuller particulars will be found in Year Book No. 6, p. 1116.

2. **Fauna.**—The ordinary types of native Australian fauna inhabit the Territory. As elsewhere on the continent, the higher *Theria* are rare, but marsupials, birds, crocodiles, fresh-water tortoises, snakes (mostly non-venomous), and frogs abound. There are many varieties of freshwater fish and littoral mollusca. Butterflies and beetles are strongly represented. The white ant is a pest, anthills in the Territory sometimes attaining great dimensions. Mosquitoes and sandflies are very troublesome, particularly in the wet season. Native fauna are in some cases protected. Buffalo formerly existed in large herds.

3. **Flora.**—The vegetation is North Australian in type, but a number of the forms belongs to the Malayan and Oceanic regions. The timber trees are not of great commercial value, but in the coastal regions tropical vegetation grows luxuriantly to the water's edge. On the wide expanses of plain country in the interior there is little vegetation. The principal orders represented in the Territory are:—*Euphorbiaceæ*, *Compositæ*, *Convolvulaceæ*, *Rubiaceæ*, *Goodeniaceæ*, *Leguminosæ*, *Urticææ*.

Fuller particulars regarding fauna and flora are given in Year Book No. 6, pp. 1116-7.

§ 5. Production.

1. **Agriculture.**—Up to the present agriculture has made little progress in the Territory, although it has been proved that rice, tobacco, coconuts, mangoes, bananas, cotton, various fodder plants, and peanuts can be successfully grown. Expense of harvesting is, at present, an obstacle to the economic production of rice, and until labour-saving machinery is procured it cannot be produced with profit. Some 5 miles from Darwin a coconut plantation, about six acres in area, is thriving, and at a small plantation at Shoal Bay the palms planted along the sea-shore are giving excellent results. There is a large stretch of first-class coconut land on the coast, but hitherto planting has not been attempted on a commercial scale. Peanuts are becoming the principal crop, and in 1929 about 150 tons were produced, compared with 38 tons in the preceding year. Some 70 settlers are now engaged in peanut growing.

2. **Pastoral Industry.**—The pastoral possibilities of certain parts of the Northern Territory were recognized at an early date, and in 1866 stock was brought into the Macdonnell Range country from South Australia. Six years later cattle were brought from Queensland to the northern parts of the Territory, and in 1879 Mr. Giles reached the Katherine River with 2,000 head of cattle and 12,000 sheep from South Australia. For various reasons sheep-raising did not succeed. The cattle industry progressed and has become the mainstay of the Territory. A great impetus was given to this industry in 1917 by the opening of extensive meat works at Darwin. Unfortunately the works closed down in 1920, and are still standing idle. The number of cattle exported by land during the year 1928-29 was 26,725, and by sea (to Manila) 6,185. The cattle industry has been retarded by the ravages of ticks and by the difficulty of travelling stock through waterless country. These difficulties are however, gradually being overcome, the former by the introduction of the practice of "dipping," and the latter by adding to the number of wells on the various stock-routes and the creation of stock reserves. Horses thrive well. Buffaloes thrive in the coastal districts, but their number has been greatly reduced by indiscriminate shooting for the sake of the hides, of which 12,618 were exported during 1928-29.

The estimated number of live stock in the Territory in the last five years is given in the table hereunder:—

NORTHERN TERRITORY.—LIVE STOCK, 1924 TO 1928.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Goats.	Camels.	Donkeys.	Mules.
1924 ..	45,059	855,285	6,914	1,000	30,000	1,000	500	300
1925 ..	46,380	970,342	8,030	382	21,859	452	1,113	280
1926 ..	42,801	863,597	6,407	343	22,318	410	1,062	413
1927 ..	40,108	835,390	9,589	292	20,103	402	1,137	499
1928 ..	37,452	768,751	7,635	407	16,499	603	1,112	496

The stock in 1928 was distributed between North Australia and Central Australia as follows :—

Area.	Horses.	Cattle.	Sheep.	Pigs.	Goats.	Camels.	Donkeys.	Mules.
North Australia..	26,786	676,528	354	394	10,952	195	544	467
Central Australia..	10,666	92,223	7,281	13	5,547	408	568	29

3. Mining.—(i) *General*. Alluvial gold-digging in the Northern Territory commenced in 1869, and up to the end of 1880 gold to the value of £79,022 had been produced. In 1881 the gold production reached its maximum, the value for that year being £111,945. During the following years it fluctuated considerably, but as long as the alluvial deposits lasted the output was satisfactory. In the transition period from alluvial to reef mining the industry declined considerably. The production of metals other than gold has suffered from vagaries of prices, and from the disadvantages of high cost of transport and of white labour. The year 1928–29 showed a considerable increase in the production of mica and a corresponding decrease in tin ore. The only mineral produced in Central Australia was mica, but the opening of the railway to Alice Springs is expected to give a fresh impetus to gold mining there.

(ii) *Mineral Production*. The following table shows the total mineral production for the last five years :—

**NORTHERN TERRITORY.—VALUE OF MINERAL PRODUCTION,
1924–25 TO 1928–29.**

Year.	Gold.	Tin Ore.	Silver- Lead Ore.	Copper Ore.	Mica.	Tantalite.	Total Value all Minerals.
	£	£	£	£	£	£	£
1924–25	1,939	15,966	617	15	2,835	..	21,715
1925–26	593	15,852	447	60	2,132	..	19,085
1926–27	468	18,754	379	..	2,596	8	22,205
1927–28	431	10,828	22	..	3,280	65	14,626
1928–29	552	6,958	79	..	10,548	207	18,344

(iii) *Coal and Mineral Oil*.—Five licences for mineral oil and coal were in existence in 1928–29, covering an aggregate area of 5,000 square miles. No prospecting for oil was carried on during the year.

4. *Pearl, Trepan, and Other Fisheries*.—In 1884 mother-of-pearl shell was discovered in the harbour of Port Darwin. Difficulty in working, principally through heavy tides and muddy water, retarded the development of the industry for many years. During 1928–29, 31 boats were operating, employing 247 Japanese and Timorese, and a few aborigines. The increase in the pearling fleet during the year, from 19 to 31, was due to the arrival at Darwin of a number of pearling luggers from Western Australia. The year's output was 204 tons, valued at £37,238, compared with 119 tons in the previous year. The territorial waters teem with fish, but the hope of establishing a salt and dried fish trade has not materialized. In the procuring of trepan, 4 boats and 10 persons, beside aborigines, were engaged.

§ 6. Land Tenure.

A description of the system of land tenure in force in the Territory will be found in Chapter V.—Land Tenure and Settlement, Official Year Book No. 22.

§ 7. Commerce and Shipping.

1. **Trade.**—No record is kept of the direction of trade between the Commonwealth States and Territories. The value of the direct oversea trade for 1901 and for each of the years 1924–25 to 1928–29 is given hereunder :—

NORTHERN TERRITORY.—VALUE OF DIRECT OVERSEA TRADE, 1901 AND 1924–25 TO 1928–29.

Items.	1901.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
	£	£	£	£	£	£
Imports	37,539	20,636	34,168	36,814	30,387	32,069
Exports	29,191	41,944	35,902	29,786	29,265	53,720
Total	66,730	62,580	70,070	66,600	59,652	85,789

The principal items of overseas export in 1928–29 were cattle, £30,330 ; pearl-shell, £21,013 ; trepang, £1,148.

2. **Shipping.**—The Territory is dependent for its shipping facilities chiefly on the services of vessels trading between Sydney and Singapore. Other vessels make occasional visits, while a sixty-days' service between Fremantle and Darwin is carried out by the "Koolinda," belonging to the West Australian State Shipping Service.

NORTHERN TERRITORY.—SHIPPING, 1924–25 TO 1928–29.

Period.	Arrivals.		Departures.	
	No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.
1924–25	56	124,715	52	124,564
1925–26	48	118,478	49	118,665
1926–27	50	126,765	50	126,999
1927–28	54	125,533	45	121,451
1928–29	61	129,997	48	129,218

The foregoing figures are exclusive of particulars of coastwise shipping. During 1928–29, 26 vessels of 445 tons net were entered as coastwise.

§ 8. Internal Communication.

1. **Railways.**—Under the agreement ratified by the Act, the Commonwealth is to construct the Northern Territory portion of the transcontinental railway line (connecting Adelaide and Darwin, via Port Augusta).

The Northern line from Adelaide terminated at Oodnadatta, about 100 miles south of the southern boundary of the Territory, but has recently been extended to Alice Springs, an addition of 292 miles. The line from Darwin to Katherine River, about 200 miles, has been extended as far as Birdum, 316 miles from Darwin. The completion of the remainder of the gap would permit of the development of the broad belts of pastoral and mineral country towards the centre of Australia. The Commonwealth also acquired on 1st January, 1911, the property in the line from Port Augusta to Oodnadatta (478 miles), and on 1st January, 1926, the control of the line was transferred to the Commonwealth Railways Commissioner. (See under Federal Railways).

2. **Posts.**—Postal communication is maintained by vessels belonging to Burns, Philp and Co., who carry on a monthly service between the Territory and the Eastern States. In addition, the vessels belonging to the State Steamship Service of Western Australia give a service once every 60 days between Fremantle and Darwin. Inland, the northern part of the Territory receives its mail via Darwin, while the southern districts are served via Adelaide.

3. **Telegraphs.**—The transcontinental telegraph line, covering a length of 2,230 miles, was completed on the 22nd August, 1872, at a cost of nearly half-a-million sterling. The line runs in a northerly direction from Adelaide to Darwin, whence telegraphic communication is provided with Asia and Europe, via Banjoewangie (Java), Singapore, and Madras. Between Darwin and Banjoewangie the submarine cable is duplicated.

High-power wireless stations have been constructed by the Federal Government at Wave Hill, in the Territory, and at Camooweal, just over the eastern boundary, in Queensland.

§ 9. Finance.

1. **Revenue and Expenditure, 1928–29.**—In the Commonwealth finance statements separate accounts are given for Northern Territory administration. Receipts and expenditure for 1928–29 are given below :—

REVENUE AND EXPENDITURE.—NORTHERN TERRITORY, 1928–29.

REVENUE.	£	EXPENDITURE.	£
Customs and Excise ..	10,170	Administrative Staff ..	87,367
Postal, Telegraph, and Telephone ..	10,354	Northern Territory Railways	252,910
Darwin-Katherine River Railway ..	50,259	Interest and Sinking Fund,	
Central Australia Railway ..	185,811	Northern Territory Loans ..	400,163
Territorial ..	458	New Works, Artesian Bores,	
Land and Income Tax ..	3,999	Roads, etc. ..	16,694
Lighthouses and Light Dues ..	851	North Australia Commission	56,988
North Australia Commission	18,223	Miscellaneous ..	73,544
Miscellaneous ..	31,517		
Deficiency on year's transactions ..	576,024		
Total ..	887,666	Total ..	887,666

2. **Northern Territory Debt.**—The items making up the total debt of the Territory as at 30th June, 1930, are as follows :—

	£	£
Debt at date of transfer to the Commonwealth,		
1st January, 1911 ..		3,931,086
Redeemed under Commonwealth Loan Acts ..	2,358,212	
Redeemed from Consolidated Revenue ..	460,625	
Redeemed from Sinking Fund ..	125	
		2,818,962
Balance, 30th June, 1930 ..		1,112,124

In addition, the balance of the Port Augusta—Oodnadatta Railway Loans taken over from South Australia amounted at the same date to £921,046, making a total of £2,033,170.

THE FEDERAL CAPITAL TERRITORY.

1. **Introductory.**—In Year Books Nos. 4 and 5, information was given in Section XXXI., in regard to the events leading to the selection of the Federal Capital Territory and the necessary legislation and the progress of operations in connexion with the establishment of the capital city. The physiography of the Territory was dealt with *in extenso*, and topographical and contour maps accompanied the letterpress, as well as reproductions of the premiated designs for the laying out of the city. Considerations of space, however, preclude the repetition of this information. On the 12th March, 1913, the official ceremony to mark the initiation of operations in connexion with the establishment of the Seat of Government was carried out. At this ceremony the selection of "Canberra" as the name of the capital city was announced.

2. **Transfer of Parliament.**—On 9th May, 1927, Parliament House at Canberra was officially opened by His Royal Highness Albert, Duke of York, the occasion being the 26th anniversary of the opening of the first Parliament of the Commonwealth at Melbourne by His Royal Highness George, Duke of Cornwall and York—now His Majesty the King—on the 9th May, 1901. (For particulars of the opening ceremony see Year Book No. 21, page 604.)

3. **Administration.**—In Year Book No. 18, a summary was given of the development of the administration up to the taking over of the control of the Territory by the Federal Capital Commission.

The administration of the Territory entered upon a new phase when the Federal Capital Commission, consisting of three members appointed by the Government took over the control of its affairs at the beginning of 1925 in accordance with the provisions of the Seat of Government (Administration) Act 1924. This Act was amended in 1926 with the object of further defining the powers and functions of the Commission. A new Act in 1928 provided that the third Commissioner should be elected by the people of the Territory. (See Year Book No. 22, p. 596.) This Act was repealed, the Seat of Government (Administration) Act 1930 taking its place. The powers and functions of the Commission reverted to the Government, being taken over by the Ministers for Home Affairs, Works and Railways, and Public Health respectively. Subsequently an Advisory Council was established by an Ordinance under the Act.

The Advisory Council consists of:—the Secretary, Department of Home Affairs; the Director-General of Health; the Secretary, Department of Works and Railways; the Civic Administrator; and three residents of the Territory elected for twelve months.

4. **Progress of Work.**—The general progress of the work of construction up to the time when the Territory was taken over by the Commission was outlined in Year Book No. 18. The progress made under the Commission is described in Year Book No. 22, p. 597.

Structures to be completed in 1930 comprise the Australian Institute of Comparative Anatomy with laboratories and accommodation for a museum of Australian fauna; the Institute for Scientific and Industrial Research; a public bath; and a small number of additional residential buildings.

5. **Lands.**—(i) *In the Federal Territory Proper.* Reference has been made in previous issues to the general conditions of land tenure in the Territory for the Seat of Government and to the area of alienated and leased land.

As considerable portions of the Territory lands are not required in connexion with the establishment of the city, large areas have been leased under special improvement conditions in regard to the extermination of noxious weeds and the destruction of rabbits and other noxious animals. The lands are classified into three grades of agricultural and three grades of grazing land. About 167,632 acres, comprising 332 holdings, are at present held under lease for periods varying from quarterly tenure to 25 years.

Regarding auction sales of city leaseholds see Year Book No. 22, p. 599.

Seven leases for church purposes have been granted under the *Church Lands Leases Ordinance* 1924–27, which require the lessees to submit a definite building programme within a specified period, and a further seven leases have been granted for church and scholastic purposes under the *Leases (Special Purposes) Ordinance* 1925–29.

The total number of leases granted under the City Areas Leases Ordinance, not including surrendered leases, at the end of the financial year 1928–29 was 299, representing a capital value of £183,135. During the year 14 new leases were granted, and 134 business and residential blocks surrendered to or determined by the Commission.

Under the terms of the *City Area Leases Ordinance* 1924–29, each block is leased for a period of 99 years at a rental of £5 per centum per annum of the unimproved capital value as assessed by the Commission or bid at auction.

(ii) *Land at Jervis Bay.* The Commonwealth has acquired from the State of New South Wales sovereign rights over the area comprising about 28 square miles of land and water at Jervis Bay for possible use as a port in connexion with the Federal Capital. The Royal Australian Naval College was established in this area on a site known as Captain's Point, but was removed in 1930 to Flinders Naval Base. Portions of the remaining lands have been leased.

6. **Railways.**—Canberra is connected with the railway system of New South Wales by a line $4\frac{1}{2}$ miles long to Queanbeyan. This line was opened for goods traffic on the 25th May, 1914, and for passenger traffic on the 15th October, 1923, and is being worked by the New South Wales Railways Commissioners for, and on behalf of, the Commonwealth.

A public railway station has been established at Kingston, and is the terminus of the existing line.

A direct and convenient passenger service is in operation connecting Canberra with Sydney and Melbourne, and trains leave both cities for Canberra daily except Saturdays. Improved facilities for goods traffic have also been provided.

A trial survey of the Canberra—Jervis Bay line has been completed, and plans prepared to enable an estimate of the cost of the line to be obtained, but no action in regard to this project is contemplated at present.

Under the provisions of the *Seat of Government Surrender Act* 1909 of New South Wales, and the *Seat of Government (Acceptance) Act* 1909 of the Commonwealth, an agreement exists between the Commonwealth and the State of New South Wales in relation to the construction of a railway from Canberra to Yass—a distance of, approximately, 43 miles, of which about 32 miles extend through New South Wales. The State is required to construct its portion of the line as soon as the Commonwealth builds a line to the boundary of the Territory.

7. **Population.**—The census return of population on the 30th June, 1930, was 8,493 in the Federal Capital Territory and 348 in Jervis Bay Territory, or a total of 8,841 persons.

8. **Live Stock.**—The live stock, according to the latest return, comprises:—

Horses	924
Cattle	5,269
Sheep	207,211

9. **Educational Facilities.**—Arrangements have been made with the New South Wales Education Department to continue for the time being the administration of education in the Territory, the expenditure involved being refunded annually to the State. There are fifteen schools in the Territory, including one at Jervis Bay. The largest of these is Telopea Park Intermediate High School, which is situated on the south side of the city area. It has accommodation for 1,000 scholars, and its curriculum provides a standard of education comparable in range of subjects with that provided at the best of the Government High Schools in New South Wales, thus permitting scholars to qualify for entrance to the Universities.

The School also provides for Junior Technical, Commercial, and Trades School Branches, as well as Evening Commercial and Matriculation Classes.

The Trades School, which is excellently equipped, supplies the necessary training for apprentices and to journeymen who are desirous of improving their respective trade qualifications.

Provision at the School has also been made for Domestic Science and Dressmaking Sections.

An Infants' School, to accommodate 450 children, has been erected on the north side of the city, where for the present scholars of the primary standard on the north side of the river are being catered for. Apart from three other smaller schools in the temporary section of the city settlement, the balance are small rural schools serving the needs of leaseholders settled in the Territory.

Reference to the establishment of a University College at Canberra will be found in Chapter IX., Education, herein.

There are at present three private schools in the Territory. The Canberra Grammar School for boys under the direction of the Council of the Monaro Grammar School, St. Gabriel's Church of England Grammar School for Girls, and St. Christopher's Convent—all of which provide for primary and secondary education.

10. **Finance.**—Receipts and Expenditure from the date of selection of the Federal Capital site were as follows:—

Receipts.—Advances, £5,845,000; Revenue from various assets, £1,129,421; Revenue from Local Government, Municipal, and State Undertakings, £385,447; Receipts from Sale of Goods, Transport, &c., £535,371; Total, £7,704,618. Initial liabilities taken over by Commission on 1st January, 1925, £2,966,600.

Expenditure.—Acquisition of lands, £893,801; Engineering Works, £3,143,168; Architectural Works, £3,419,622; Other capital expenditure, £534,243; Total, £7,990,834. Maintenance, £2,130,488. Administration not capitalized, £476,593. Other expenditure, £79,179. (See also Year Books Nos. 18 and 19.)

NORFOLK ISLAND.

1. **Area, Location, etc.**—Norfolk Island, discovered by Captain Cook in 1774, is situated in latitude $29^{\circ} 3' 45''$ south, longitude $167^{\circ} 58' 6''$ east. Its total area is 8,528 acres, the island being about 5 miles long and 3 miles wide. From Sydney it is distant 930 miles, and from New Zealand 400 miles. The coast line is 20 miles, and its form that of an irregular ellipse. Except on the south-west, inaccessible cliffs rise from the water's edge. The climate is equable, the temperature ranging between 56° and 82° , with a mean of 68° . The average annual rainfall is 55 inches. It has been said that the salubrious climate, coupled with the beauty of its land and sea scapes, should combine to render Norfolk Island "the Madeira of the Pacific." At present the island is visited annually by a fair number of tourists, but with improved shipping facilities the traffic would considerably increase.

2. **Settlement.**—The first colonization, in 1788, was by Lieutenant King, who in H.M.S. *Sirius* established a small penal station as a branch settlement of that at Port Jackson. The settlement was abandoned in 1813, and for 13 years thereafter its chief use was as a whaling station and place of call for British warships.

From 1826 to 1855 it was again made a penal station. In 1844 it was annexed to Van Diemen's Land (Tasmania).

The descendants of the *Bounty* mutineers, having become too numerous to subsist on Pitcairn Island, were removed thence to Norfolk Island in 1856. The new community numbered 193 males and 99 females—and were the descendants of British sailors and Tahitian women.

3. **Administration.**—In 1856 the island was created a distinct and separate settlement under the jurisdiction of New South Wales. In 1896 it was made a dependency under the Governor of that Colony. In 1913, however, the Federal Parliament provided for the taking over of the island as a territory of the Commonwealth, and since the 1st July, 1914, the island has been administered by the Department of Home and Territories, through an Administrator and Chief Magistrate. (See also Official Year Book No. 22, p. 604.)

4. **Population.**—The population on 30th June, 1929, was 490 males and 442 females, a total of 932. In the year 1928–29, 23 births, 11 deaths, and 14 marriages were recorded.

5. **Live Stock.**—The latest returns of live stock show that there are on the island 1,590 cattle, 645 horses, 279 sheep, and 65 pigs. In addition, there are 5,772 head of poultry.

6. **Production, Trade, etc.**—The soil throughout is rich, and is specially suitable for the cultivation of citrus fruits, bananas, and (in parts) coffee. The banana industry is making rapid progress and over 25,000 cases were shipped in 1928–29, as compared with about 11,000 cases during the preceding year. Various other sub-tropical fruits thrive well. During 1928–29, the export of oranges was 901 cases; bananas, 25,155 cases; passion fruit and pulp, 859 cases; lemon juice and pulp, 214 casks; and lemon peel, 10 cases; mixed fruit, 785 cases; potatoes, 838 cases. There are many thousands of lemon trees and guavas growing wild throughout the island.

Large numbers of whales pass the island throughout the season but whaling has now practically ceased. The preserved fish industry also offers a field for commercial energy; such fish as trevalla, kingfish, schnapper, and many others, are plentiful. The "all-red" cable from Great Britain via Vancouver, Fanning Island, and Fiji, bifurcates at Norfolk Island, one line connecting with New Zealand, the other with Brisbane. A monthly steamship service between Norfolk Island and Sydney is carried on by Burns, Philp and Co., while the New Zealand Government steamer *Maui Pomare* has established a regular service with Auckland.

Imports and exports for the last five years are given hereunder :—

IMPORTS AND EXPORTS, 1924-25 TO 1928-29.

Heading.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Imports	17,190	18,882	27,869	42,756	55,894
Exports	3,961	6,156	13,578	19,254	33,027
Total	21,151	25,038	41,447	62,010	88,921

7. **Social Condition.**—Education is free and compulsory up to the age of fifteen years. The school is under the New South Wales Department of Public Instruction, with standards corresponding to the State public schools, but the salaries and allowances of the teachers are paid by the Norfolk Island Administration. A Parents and Citizens' Association has been formed in connexion with the school, and a school-paper is printed. The number of scholars enrolled at the end of 1929, was 135.

The Magistrates' Court has criminal jurisdiction in all crimes except capital offences, civil jurisdiction in all matters, and authority to grant probate and letters of administration.

8. **Finances.**—The receipts and expenditure for the year 1928-29 were as follows :—

NORFOLK ISLAND.—RECEIPTS AND EXPENDITURE, 1928-29.

Heading.	Receipts.	Heading.	Expenditure.
	£		£
Brought forward ..	2,923	Salaries	4,305
Commonwealth Subsidy ..	4,000	Miscellaneous	2,092
Tariff Collections in Sydney ..	1,538	Purchase of Liquor ..	1,704
Sale of Liquor	3,573	Balance carried forward ..	4,505
Miscellaneous	572		
Total	12,606	Total	12,606

Traffic in intoxicating liquor is prohibited, and the item "Sale of liquor" in the table refers to liquor dispensed under medical prescription.

PAPUA.

§ 1. General Description.

1. **Early Administration.**—Particulars of the early administration of Papua were given in Official Year Book No. 19, p. 576, but owing to limitations of space have not been included herein.

2. **Administration by Commonwealth of Australia.**—The Territory was placed under the authority of the Commonwealth on 1st September, 1906, by proclamation issued in pursuance of Letters Patent of the 18th March, 1902, and was accepted by the Commonwealth by the Papua Act 1905, which came into force by virtue of the proclamation aforesaid. The transfer was made under the authority of section 122 of the Constitution. The Territory is now under the administration of the Commonwealth, but not included within it, and is divided into eleven magisterial districts.

3. Area, etc.—Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Sudest and Rossel Islands, lies between 11° S. and 12° S. latitude. It is separated from Australia by Torres Strait. The length of Papua from east to west is upwards of 800 miles; towards either end the breadth from north to south is about 200 miles, but about the centre it is considerably narrower. The Territory comprises also the islands of the Trobriand, Woodlark, D'Entrecasteaux and Louisiade groups. The length of coast-line is estimated at 3,664 miles—1,728 on the mainland, and 1,936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland, and 2,754 on the islands. A reference to the physical characteristics of the Territory appears in previous issues of the Official Year Book (see No. 18, p. 633).

§ 2. Population.

The white population of Papua on 4th April, 1921, was 1,343, made up of 961 males and 382 females. Included in these figures were 79 persons, who were passengers and crew of the s.s. *Marsina*, which was at Samarai at the taking of the Census. The following table gives the white population in each of the last five years:—

WHITE POPULATION OF PAPUA, 1925 TO 1929.

YEAR ENDED 30TH JUNE.

1925.	1926.	1927.	1928.	1929.
1,371	1,452	1,366	1,428	1,523

The chief occupations of the non-indigenous population at the taking of the Census were:—Government officials and employees, 132; commercial pursuits, 150; shipping, 124; tropical agriculture, 266; missionary work, 144; mining, 159.

It is not possible to give exact data regarding the number of natives, because a large area of the interior is not yet under Government control. The official estimate is 275,000. Such censuses of the native population as have been taken during recent years point to a slight increase. The coloured population, other than Papuans, numbered on 4th April, 1921, 577, and included many mission teachers from Samoa, Fiji, and other Pacific Islands. On the same date, half-castes, with one of the parents a European, totalled 158. An Immigration Restriction Ordinance prohibits the immigration of persons who fail to pass the dictation test, or who are of bad character, or likely to become a charge upon the public. Exemptions may, however, be granted by the Lieutenant-Governor to persons of special skill required for employment as overseers or foremen.

§ 3. Native Labour, Taxation, Health, etc.

1. Native Labour.—Information regarding the conditions connected with the employment of native labour will be found in Official Year Book No. 22, p. 607.

PAPUA.—NATIVE LABOUR, 1925 TO 1929.

Year ended 30th June—	Natives Engaged.	Natives paid Off.		
		Number.	Wages Paid.	Average Annual Wage per Native.
			£ s. d.	£ s. d.
1925	6,817	4,661	46,019 14 5	9 17 5
1926	6,716	6,317	63,082 17 5	9 19 8
1927	5,566	6,666	62,086 12 8	9 6 4
1928	6,485	6,269	62,246 17 2	9 18 7
1929	5,355	5,101	50,736 0 0	9 18 11

The average number of natives under contract of service in 1929 was 6,729, as compared with 8,411 in the foregoing year. Approximately 1,333 were employed as free and casual labourers. Hitherto the supply of native labour has been sufficient to meet the demand. The smaller number employed in 1929 was due to a fall in rubber and copra prices, a slump in mining, and cessation of the bêche-de-mer industry.

2. Native Taxes.—Under the Native Taxes Ordinance, passed in 1918, a tax not exceeding £1 may be imposed on natives, excepting native constables, mission teachers, natives unfit for work, and those who have not less than four living children. The proceeds of the tax must be expended on education, or devoted to purposes directly benefiting the natives, as may be prescribed.

The taxes collected in 1928–29 amounted to £15,726, of which £7,089 was transferred to the Native Education Fund, and £6,413 to the Native Benefit Fund. The Native Education Fund during the year 1928–29 disbursed to primary and technical education £4,550 and to agricultural education £744. A sum of £2,000 was transferred to the Native Benefits Fund, leaving a credit balance of £29,230. From the Benefit Fund the expenditure included:—Anthropology £1,495, health £5,038, village improvements £314, family bonuses £1,338.

3. Care of Half-caste Children.—An Ordinance was passed in 1922, to provide for the care and maintenance of neglected half-caste children. The Ordinance provides that a sum of £26 per annum shall be paid to the Commissioner for Native Affairs by the adjudged father of the child until the child, if a boy, shall reach the age of 16 years, or, if a girl, 18 years.

4. Health.—During the year natives to the number of 1,438 were admitted to the native hospitals in Port Moresby and Samarai. The chief complaints treated were yaws, ulcers, lung affections, and gonorrhœa. Two travelling medical officers and five European medical assistants were employed, and native medical assistants are being trained by them. Two qualified doctors and a number of nurses are now employed by mission societies, and these have assisted greatly in improving the health of the natives. The work done consisted chiefly of dealing with cases of yaws by means of the latest arsenical drugs, the distribution of hookworm treatment, and the control of venereal diseases. Out of an average of 6,729 native labourers employed by Europeans, 57 died, as compared with 94 during the previous year.

§ 4. Land Tenure.

1. Method of Obtaining Land.—Information under this heading is given in Official Year Book No. 22, p. 608, but limitations of space preclude its repetition in the present volume.

2. Holdings.—(i) *General.* On the 30th June, 1929, the lands of the Territory were held as follows:—

PAPUA.—HOLDINGS, 1929.

Description.	Area.
	Area.
Land held by the natives	56,926,650
Crown land	825,589
Freehold land	22,934
Leasehold land	170,427
Area of Territory	57,945,600

Private sales of land in the Territory have now practically ceased. The Government buys from the natives, and then leases to planters, who are forbidden to have direct dealings in land with Papuans.

(ii) *Leaseholds.* The position as regards leasehold tenures may be seen from the following table :—

PAPUA.—LEASEHOLDS, 1924-25 TO 1928-29.

Year ended 30th June ..	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Land held under lease .. acres (as recorded)	188,348	186,966	169,956	170,427	180,685

Of the total area of 180,685 acres shown above, agricultural leases accounted for 164,438, pastoral leases for 14,570, special leases for 881, mission leases for 508, and other leases for 288 acres.

The area of land acquired by the Crown in 1928-29 was 345 acres.

The total area surveyed in the Territory is 21,694 acres of freehold, and 260,972 acres of leasehold.

§ 5. Production.

1. *General.*—The products of the Territory are obtained from its agricultural, forestal, fishing, mining, and manufacturing industries. For many years gold-mining yielded the largest returns, but the production has dwindled considerably owing to the exhaustion of the alluvial deposits. There is a possibility of obtaining petroleum in marketable quantities. Amongst plantation products, copra occupies the foremost place, but little planting has been done in recent years. Portions of the Territory appear well suited for cotton cultivation.

2. *Agriculture.*—(i) *Soil and Rainfall.* The physical features of Papua are favourable to agriculture. Rich soils at varying elevations, and heavy and evenly distributed rainfall favour the cultivation of a variety of tropical products including sugar cane, coconuts, sago palm, bread fruit, dyewoods, spices, ginger, nutmegs, bananas, and other fruits. There are large areas of rich alluvial and volcanic soils along the coast, and fertile land is found at elevations up to 6,000 feet. Heavy rainfalls occur, except over a belt of country which runs back from the coast to the hills, and which has its dry season from May to November. This “dry” area is admirably suited for the production of tobacco, fibres, cotton, etc. There are 23 meteorological stations throughout the Territory, and an economic museum and agricultural library have been established.

(ii) *Plantations.* On 31st December, 1928, there were 330 plantations. Agricultural settlement has been mostly in the Central and Eastern Divisions, and the area planted was 60,136 acres, as against 61,370 in 1927. The principal plantation crops are coconuts, rubber, and sisal hemp. There is also some cultivation of bowstring hemp, kapok, coffee, tobacco, cotton, vanilla, cocoa, tapioca, cinnamon, tea, rice, and maize. The natives are compelled by an ordinance to plant coconuts for food supply. In addition to the coconuts in these plantations, many more are planted over small and widely scattered areas by the older natives in accordance with custom. A recently promulgated ordinance, the *Native Plantations Ordinance*, is an attempt at establishing plantations in which the Government and the natives are joint partners. The following table shows the areas under the different cultures at the end of December, 1928 :—

PAPUA.—AREA OF PLANTATIONS, 1928.

Description.	Area.
	Acres.
Coconuts	48,363
Rubber	8,804
Hemp	1,750
Kapok	315
Coffee	103
Rice	25
Cotton	53
Other cultures (including fruit trees)	723
Total	60,136

The quantities of copra and rubber exported during the year ended 30th June, 1929, were:—Copra, 12,480 tons; rubber, 470 tons. There has been a slight decrease in the acreage under coconuts, and an increase in the acreage under rubber. The acreage under hemp shows a considerable decline.

(iii) *Government Plantations.* There are two Government plantations, the Orangerie Bay coconut plantation, and the Kemp Welch rubber plantation. The profits from these plantations last year were £3,382, as against £4,362 in 1927–28.

3. *Forestry.*—According to the Commonwealth Forestry Adviser the principal softwood timber is known as “ilimo,” while among satisfactory timbers of the lowlands are “nara,” “medobi,” and “melila.” There is a large number of woods, varying from the softest to the hardest, including beautiful cabinet woods, but research is necessary to determine their usefulness. The development of a coniferous belt at the higher altitudes offers great possibilities. It is believed that teak and sandalwood are well suited for cultivation.

4. *Live Stock.*—On 31st December, 1928, the live stock in the Territory consisted of 880 horses, 6,347 head of cattle, 136 mules, 26 donkeys, 4,088 goats, and 871 pigs. A Government stud-farm has been established for the breeding of horses. The introduction of rabbits, foxes, hares, and monkeys is prohibited.

5. *Fisheries.*—Pearl-shell fishing occupies an important place in the industries of Papua. A considerable number of luggers is licensed, but the returns are mostly credited to Queensland, whose boundary approaches to within a few miles of the Papuan coast. The species of tortoise which supplies the commercial tortoise-shell is also a native of the Territory. *Bêche-de-mer* and *trochus* are found along the shores and reefs, and form valuable articles of export.

6. *Mining.*—(i) *Variety of Minerals.* Minerals have been found over a wide range of country. Those discovered so far are—gold, copper, tin, lead, zinc, cinnabar, iron, osmiridium, gypsum, manganese, sulphur, graphite, chromite, brown coal, lignite, and petroleum. The existence of petroleum has been traced at scattered intervals over a large area.

Of precious stones, only the topaz and beryl have been obtained. Large beds of apparently good coal also exist.

(ii) *Gold.* In 1888 the first gold was discovered, and the search gradually spread over every division, finds being reported wherever the explorers went. The yield in 1923–24 was the lowest recorded since 1895; it then improved, but last year again shows a considerable decline.

The total quantity, in fine ounces, and the value as returned of the gold yield for the last five years are given below:—

PAPUA.—GOLD YIELD, 1924–25 TO 1928–29.

1924–25.		1925–26.		1926–27.		1927–28.		1928–29.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
fine ozs. 4,153	£ 17,642	fine ozs. 6,388	£ 27,135	fine ozs. 6,150	£ 26,124	fine ozs. 1,704	£ 7,240	fine ozs. 1,625	£ 6,901

Most of the rivers, with the exception of those flowing into the Gulf of Papua, have been declared open to gold-dredging, and good yields have been obtained. The total value of gold won to 30th June, 1929, was £1,747,477.

(iii) *Copper.* Owing to the very low prices ruling for copper in the world's market, the copper mines in Papua have suspended operations. The total value of the copper exported to the 30th June, 1929, was £366,489.

(iv) *Osmiridium*. The existence of osmiridium had been known for several years, but for some time no serious attempt was made to collect it, the alluvial gold miner often picking out the larger slugs of the metal from his gold parcel and throwing them away. The production in 1928-29 amounted to 29 ozs., valued at £375.

(v) *Other Minerals*. Some good samples of galena (sulphide of lead) have been obtained, while cinnabar (sulphide of mercury), graphite (or plumbago), zinc-blende, native sulphur, and other minerals are known to exist. In 1924 a deposit of lignite was discovered on Smoky Creek, a tributary of the Era River.

A mineral laboratory and museum have been fitted up, and are available to prospectors and others interested.

7. **Water Power.**—Most of the rivers in Papua carry a large volume of water from a great height over a relatively short distance, thereby offering opportunities for the installation of hydro-electric power plants. It is estimated that there are at least 10,000,000 h.p. available for this purpose.

§ 6. Finance, Trade, Postal and Shipping.

1. **Finance.**—Owing mainly to the closing down of the New Guinea Copper Mines at Bootless Inlet towards the end of 1926, but partly to other causes, the revenue has declined during the last couple of years. The principal sources of revenue were as follows:—Commonwealth Grant, £50,000; Customs and Excise, £49,237; Government Plantations, £8,807; Fees of Office, £6,646; Land Revenue, £4,348; Post Office, £3,102; Port and Wharfage Dues, £2,981; and Miscellaneous, £12,105.

The expenditure on Public Works was £7,011 less than in the previous year.

Returns of revenue and expenditure for the last five years, exclusive of Commonwealth grants, are given hereunder:—

PAPUA.—LOCAL REVENUE AND EXPENDITURE, 1924-25 TO 1928-29.

Item.			1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
			£	£	£	£	£
Revenue	..	..	82,909	116,367	111,508	107,052	93,751
Expenditure	..	..	143,831	157,203	167,727	158,964	152,949

2. **Trade.**—The value of imports and exports for the last five years is shown in the table below:—

PAPUA.—VALUE OF IMPORTS AND EXPORTS, 1924-25 TO 1928-29.

Particulars.			1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
			£	£	£	£	£
Imports	..	..	459,080	470,774	455,904	403,561	361,271
Exports	..	..	367,629	649,373	454,462	350,363	337,365
Total Trade	..	..	826,709	1,120,147	910,366	753,924	698,636

The decrease in the value of exports is due to a fall in prices for copra and rubber, and to the closing down of the copper mines.

As in all new countries, the imports consist chiefly of articles necessary for the primal needs of the community, such as agricultural products and groceries, drapery, machinery, tobacco, oils, paints, beverages, wood, wicker and cane, drugs, etc. The chief items of export during the last five years are as follows :—

PAPUA.—PRINCIPAL EXPORTS, 1924-25 TO 1928-29.

Article.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Bêche-de-Mer	10,351	10,205	16,193	14,907	11,833
Copper Ore	41,674	201,732	35,799	208	..
Copra	172,905	204,097	186,837	194,019	214,051
Cotton	3,761	4,866	824	59	415
Gold	14,980	22,320	29,115	6,364	6,767
Hemp	13,141	7,695	33	..	..
Osmiridium	3,630	1,500	430	550	375
Pearls	19,300	13,249	8,968	827	1,861
Pearl Shell and Trochus Shell ..	8,773	14,317	7,576	12,537	9,144
Rubber	68,507	194,849	156,274	102,158	46,816
Natural History Specimens ..	..	13	..	14	776

3. Shipping.—The following table shows the number and tonnage of oversea vessels entered and cleared at ports during the years 1924-25 to 1928-29. All the vessels except two were of British nationality.

PAPUA.—OVERSEA SHIPPING, 1924-25 TO 1928-29.

Year.	Vessels.	Tonnage.
1924-25	120	78,613
1925-26	115	129,553
1926-27	143	226,948
1927-28	159	226,784
1928-29	171	184,946

Throughout, the figures are exclusive of ships of war and Government vessels.

§ 7. Progress of Papua.

1. Statistical Summary.—As already stated (§ 2, *supra*) the Territory was placed under the Commonwealth control on 1st September, 1906. The following table indicates the progress that has been made since that date :—

PAPUA.—STATISTICAL SUMMARY, 1907 TO 1929.

Items.	Year ended 30th June—	
	1907.	1929.
White population	690	1,523
Native labourers employed	2,000	6,729
Armed constabulary	185	300
Village constables	401	1,147
Territorial revenue	£21,813	£93,751
Territorial expenditure	£45,335	£152,949
Value of imports	£87,776	£361,271
Value of exports	£63,756	£337,365
Area under lease	70,512	180,685
Area of plantations	1,467	60,136
Meteorological stations established	3	23
Gold yield	12,439	1,625
Live stock in Territory—		
Horses	173	880
Cattle	648	6,347
Mules	40	136

THE TERRITORY OF NEW GUINEA.

§ 1. General Description.

The present Territory of New Guinea comprises that portion of the German New Guinea Protectorate which lay south of the equator (excepting only the island of Nauru), and which was known in German times as the "Old Protectorate." The principal islands (with their German names if these differ from those now in use) and their approximate areas are as follows:—

AREA OF TERRITORY OF NEW GUINEA.

Particulars.						Approximate Area.
						Square miles.
North-East New Guinea (Kaiser Wilhelm's Land)						70,000
Bismarck Archipelago—						
New Britain (Neu Pommern)						13,000
New Ireland (Neu Mecklenburg)						3,000
Lavongai (New Hanover or Neu Hannover)						600
Admiralty Islands and North-Western Islands						1,000
Solomon Islands—						
Bougainville						3,200
Buka						200
Total						91,000

Information regarding physiography and climate will be found in Official Year Book No. 22, p. 613. A map of the territory was published in Year Book No. 16, p. 665.

§ 2. Government.

1. **The Military Occupation.**—On the 17th September, 1914, the Acting Governor of German New Guinea signed terms of capitulation with the officer commanding a Naval and Military Expedition sent from Australia, and thereafter the Territory was under military administration until the establishment of Civil Government in May, 1921.

2. **Mandate.**—The Mandate in accordance with which the Territory of New Guinea is administered by the Commonwealth was issued by the League of Nations in December, 1920. The terms of the Mandate appear in Official Year Book No. 16, p. 662-3.

3. **New Guinea Act.**—In anticipation of the issuing of the Mandate, the Commonwealth Parliament had already, in September, 1920, passed the New Guinea Act 1920, by which the Governor-General was authorized to accept the Mandate when issued. The Territory was, by the Act, declared to be a Territory under the authority of the Commonwealth, by the name of the Territory of New Guinea.

The Act provided for an Administrator, while power to legislate for the Territory was to be exercised by the Governor-General, and provision was also made for the observance of safeguards in the interests of the natives as set out in the Mandate.

4. **Establishment of Civil Government.**—Official Year Book No. 19, p. 586, contains an account of the establishment of Civil Government in the Territory. Owing to considerations of space, however, the information is not repeated here.

5. **Expropriation.**—The Treaty of Peace provided that German nationals resident in her former colonies might be repatriated; and that the property rights and interests of German nationals in former colonies might be retained and liquidated by the Allies, the proceeds being credited to Germany in part payment of the reparation payable by her under the Treaty. In pursuance of these powers, in September, 1920, the property of the principal German companies in the Territory, and in March, 1921, that of a large number of German planters, was vested in the Public Trustee. (See Year Book No. 17, p. 631.) In 1926 and 1927 these plantations were transferred to private owners.

6. **Departments and Districts.**—The Administration is organized in seven Departments—Government Secretary; Treasury; Native Affairs; Public Health; Customs and Shipping; Lands, Mines, Surveys, and Forestry; and Agriculture.

For administrative purposes the Territory is divided into eight Districts. They are as follows :—New Britain, comprising New Britain and adjacent islands; on the Mainland—Morobe, Madang, Aitape, and Sepik; New Ireland, comprising New Ireland, Lavongai and adjacent islands; Manus, comprising the Admiralty Group; and Kieta, the former German portion of the Solomon Islands. Each district is under a District Officer, assisted by a small staff.

7. **Statute Law.**—The Acts of the Commonwealth Parliament do not (unless expressly so stated) extend to the Territory, but the *Laws Repeal and Adopting Ordinance* 1921 provided that certain Acts and Ordinances should be applied thereto. (See Year Book No. 17, p. 631.)

8. **Reports to the League of Nations.**—Nine reports have been rendered to the League of Nations in compliance with Article 6 of the Mandate, the latest being for the year ended 30th June, 1929.

§ 3. Population.

1. **White Population.**—The increase in the white population at various intervals since 1885 is shown in the appended tabulation. On 4th April, 1921, it was 1,288, of whom about 250 were missionaries, and 262 were persons engaged in administration, 715 were British subjects, and nearly all the remainder were nationals of former enemy countries. On 30th June, 1929, the number of Europeans was about 2,600.

TERRITORY OF NEW GUINEA.—WHITE POPULATION, 1885 TO 1929.

Year.	Number.
1885	64
1895	203
1910	687
1914	1,027
1921	1,288
1927	1,800
1928	2,400
1929	2,600

2. **Asiatic Population.**—Malays seem to have been the first Asiatics brought by the Germans to German New Guinea; 37 of them are recorded on the mainland in 1885. About 1889 the New Guinea Company began to bring Chinese, Malays, and Javanese in growing numbers from Singapore and Java to work on its plantations; by 1892 there were about 1,800 on the mainland. By 1898 the number had decreased to 300 or 400, while at present it is less than 250.

About ten years later, Chinese were brought from China to the Protectorate; in 1911 there were 555; in 1914, 1,377; in 1921, 1,424 and in June, 1929, about 1,250.

In 1895 there were 2 Japanese in the Protectorate; in 1911 there were 25; in 1914, 103; in 1921, 87, and in June, 1929, about 50 residents. The total Asiatic population was 1,681 in 1914, and 1,778 in 1921. There were also, in 1921, 28 Polynesians and 69 half-castes.

The number of Asiatics has slightly decreased. In 1928-29 the births of Chinese exceeded the deaths by 18, but departures exceeded arrivals by 24. The number of Japanese remained stationary.

The Chinese provide the skilled artisans of the Territory, and many of them are small traders. Most of the Japanese residents are employed in the plantations, ship-yards, and stores.

3. Native Population.—As a large portion of the Territory is not under Government influence it is not possible to obtain reliable figures in regard to the number of the natives.

The following table shows the number enumerated in 1928-29.

TERRITORY OF NEW GUINEA.—NATIVE POPULATION, 1928-29 (EXCLUSIVE OF INDENTURED LABOURERS).

Places.	Children.			Adults.			Total.		
	Males.	Females.	Persons.	Males.	Females.	Persons.	Males.	Females.	Persons.
New Britain ..	16,211	13,689	29,900	23,436	23,354	46,790	39,647	37,043	76,690
New Ireland ..	7,818	6,140	13,958	11,869	12,653	24,522	19,687	18,793	38,480
Admiralty Group	2,872	2,685	5,557	3,896	4,451	8,347	6,768	7,136	13,904
Solomon Islands	7,984	6,264	14,248	11,763	12,608	24,371	19,747	18,872	38,619
N.G. Mainland ..	36,988	29,485	66,473	52,714	52,961	105,675	89,702	82,446	172,148
Total	71,873	58,263	130,136	103,678	106,027	209,705	175,551	164,290	339,841

The total native population in the Territory is estimated roughly at about 457,000. Whether the number is increasing or decreasing cannot yet be ascertained with certainty. The number of natives indentured as labourers, mostly for plantation work, on 30th June, 1929, was 30,325, compared with 28,253 in the previous year.

§ 4. The Natives.

1. General.—A brief description of the native inhabitants of the Territory was included in Year Book No. 16, p. 670. It may be noted here that the natives are divided into two main groups—Melanesian and Papuan—the former, with odd exceptions constituting the population of the Bismarck Archipelago, the Solomon Islands, and the coastal districts of the New Guinea mainland; while the latter inhabit the interior of the mainland. Odd tribes of Negritoes are known to exist in the mountains of New Guinea. In the Admiralty Islanders there is a strain of Papuan, and, possibly, of Polynesian blood, while the Western Islanders and the inhabitants of the small islands east and south-east of New Ireland are Micronesians.

2. Land Tenure.—Native customs in regard to the ownership and use of land may be briefly outlined as follows :—The ownership and use of the land are generally individual, although, in some rare cases, particularly in North Bougainville, the communal system exists. In districts where a great many coconut-bearing palms are growing on native lands it is often found that the land is the property of a chief or of one of the old men of the tribe, and that the coconut palms growing thereon are divided into small groves, and are the property of several members of the tribe. Customs with regard to the use of unoccupied forest lands vary. Right of inheritance to land is almost invariably through the maternal branch. (See Year Book No. 17, p. 634.)

3. Research Work.—During the German occupation of the Territory a certain amount of research work was carried out, partly by scientific expeditions, and partly by missionaries and by a local resident. An anthropologist has been appointed by the Commonwealth Government to consolidate the work already done, and to extend it to parts of the Territory which have not yet been covered. The results of his work appear in special reports.

4. Education.—The education of the natives was provided for in the "Education Ordinance of 1922" under which the Administrator was authorized to establish schools, grant money therefor, prescribe instruction, and arrange for the training of teachers and other matters. Simultaneously a Native Education Trust Fund was inaugurated, over which the Administrator was given control, and for the benefit of which he was empowered, within certain limits, to levy taxes on the natives and on employers of native labour. The expenditure on native education in 1927-28 was £10,057. Though the natives are liable to pay education tax none has been collected since 1922-23, whereas a considerable sum annually is obtained from a tax levied on employers of native labour.

Government educational establishments have been founded at Malaguna, near Rabaul and at Kavieng. For some time the Administration has been collecting details of the systems of education in force in other native countries. It is proposed later to appoint a Committee to study the question of native education as regards New Guinea, and to submit recommendations for the establishment of a system that will adequately meet the needs of the Territory. (See Year Book No. 17, p. 635.)

A considerable amount of educational work is carried out by the missions, the schools maintained being of three classes—(a) elementary schools in villages; (b) intermediate boarding schools at head-quarters; and (c) high schools and technical schools. At the end of June, 1929, the various missions maintained 1,305 schools, employing 231 European teachers, 4 Asiatic and 1,186 native teachers. The pupils numbered 36,507.

The granting of assistance to mission schools is authorized by the Education Ordinance, but no grants have hitherto been made.

5. Health of Natives.—In a report dealing with the health of the natives in New Britain submitted before the war, it was stated that "the natives in the districts examined are not degenerate; but they are sick." The same qualification undoubtedly applies to the native population throughout the Territory.

The diseases taking the greatest toll of native life—directly, or through lowering vitality—are:—Malaria, respiratory diseases, dysentery, frambœsia, yaws, tropical ulcer, hookworm, filariasis, and beriberi. Further reference to this subject will be found in Official Year Book No. 18, p. 647.

The Health Department in Rabaul possesses:—(i) a staff of medical officers and orderlies, including travelling doctors; (ii) Native Hospitals at Government stations and sub-stations (its staff also supervises hospitals on plantations); (iii) a laboratory; (iv) training system for natives as medical orderlies; (v) scheme of distribution of medical necessities; (vi) a leper-station near Madang; and (vii) undertakes the general oversight of sanitary conditions.

6. Missions.—There is a number of mission societies working in the Territory. The Society of the Sacred Heart of Jesus works in the Bismarck Archipelago, the Society of the Holy Ghost along the coast of North-East New Guinea from Sek to the Dutch border, the Marists in Buka and Bougainville. These are Roman Catholic Missions. The Protestant Missions are the Australian Methodist Mission in New Britain and New Ireland, the New Zealand Methodist Mission in Bougainville, the Liebenzell Mission in the Admiralty Group, and the Lutheran Mission (supported and staffed by the Lutheran Churches in Australia and America), which work along the coast of North-East New Guinea from Sek to the Papuan border. All these societies combine teaching and planting with their missionary work. The missionaries working in the Mandated Territory in 1927 numbered 373, comprising American, 28; Austrian, 7; Belgian, 1; British, 53; Dutch, 40; French, 25; German, 197; Italian, 2; Luxemburgese, 6; Polish, 11; Free City of Danzig, 1; Czechoslovak, 2. Some of the societies have small printing plants by which reading matter in one or other of the native languages is produced.

§ 5. Land Policy.

1. **Acquisition of Land.**—A short account of the modes of acquiring land appears in Official Year Book No. 19, p. 590, but considerations of space preclude its repetition herein.

2. **Land Policy of the Present Administration.**—The Land Ordinance 1922–24 provides for sale as well as leasing of land belonging to the Crown. The divergence from the policy usually adopted by the British in the Pacific (including Papua), which provides for leasehold only, was made with a view to disposing by sale of the freehold properties taken over from Germans, and which until recently were controlled by the Expropriation Board. Reference to the leasehold system in force will be found in Official Year Book 18, page 648.

A total area of 259,801 hectares (about 640,000 acres) had been alienated up to the 30th June, 1929. The area alienated in 1928–29 was 6,040 hectares (about 14,900 acres).

3. **Registration of Titles.**—Under German law there was a system of registration of titles in a "Ground Book," but registration did not confer an indefeasible title. The German system has been replaced by one modelled on the Torrens plan, embodied in an Ordinance entitled the "Lands Registration Ordinance," 1924.

§ 6. Production.

1. **General.**—The Territory possesses great natural resources, but their development has barely commenced, and progress in this direction will depend largely on the possibility of securing an adequate supply of suitable labour.

2. **Agriculture.**—(i) *General.* No estimate has yet been made of the area of land suitable for agriculture; but it is certain that the area already alienated, if planted to its full capacity, would be far greater than the present native population could cultivate.

The natives have been described as a people of peasant proprietors, and everywhere they practice a crude form of agriculture. Their gardens afforded but a small amount of produce for oversea trade, and the exports of the Protectorate grew only as European plantations were made.

Under the supervision of the Director of Agriculture, soil analyses have been undertaken in different parts of the Territory, experimental stations have been founded in Rabaul, Bitu Paka, and in the Markham Valley, and an agricultural school has been established at Kerawat, 28 miles from Rabaul, where natives are being trained in tropical agriculture. A laboratory and a herbarium have been established, and travelling inspectors appointed for the purpose of combating plant pests. Experiments are being carried on with a variety of crops; these in conjunction with the *Papua and New Guinea Bounties Act* 1926, and the preference given by the Commonwealth Tariff to certain produce grown in the Territories are expected greatly to stimulate agriculture.

(a) *Tobacco.* This crop has been cultivated with success at Astrolabe Bay in North-East New Guinea, and in the Bismarck Archipelago. Tobacco of high quality, rivalling the best Sumatra leaf, is said to have been produced. Tobacco growing is again being experimented with.

(b) *Cotton.* In 1924–25 the Government obtained 1,615 lb. of cotton seed, and experiments are being carried on at the experimental stations as well as by private planters, including a few natives.

(c) *Sisal Hemp.* There was a steady although small export of sisal hemp in German times. The quantity exported in 1913 was 10 tons, but none seems to have been exported since 1914.

(d) *Cocoa*. Cocoa has been successfully grown, principally at Vitu (French Islands); in 1913, 137 tons were exported. In 1928-29 the export was 72 tons.

(e) *Coffee*. The cultivation of coffee for export has been commenced; but progress is slow.

(f) *Rubber*. On the mainland a small area has been planted with *Ficus elastica*, but in consequence of the low price of the inferior rubber produced from this source the trees are not being tapped.

(g) *Copra*. The production of copra is the main industry. The quantity exported in 1928-29 was 60,435 tons. The area under coconuts increased from 76,845 acres in 1914 to 192,290 acres on 30th June, 1929, of which 155,000 were in bearing.

(h) *Other Crops*. The climate and soil of the Territory are suitable for the cultivation of rice, Manila hemp, cinchona, nutmeg, vanilla, peanuts, kapok and maize, but hitherto their cultivation has either not advanced beyond the experimental stage or has been attempted on a small scale only. Sugar-cane of many varieties flourishes, and the natives cultivate extensive areas for their own use; other indigenous food-producing plants include the sago palm and the cassava.

(i) *Plants Yielding Power Alcohol*. It seems probable that alcohol for power purposes will be obtainable economically from the Territory. The sago palm and nipa palm yield as much as 60 gallons a ton, and in places are very abundant.

(ii) *Area of Plantations*. The area of plantations and the principal crops grown thereon are shown in the table hereunder for the year ended 30th June, 1929. The figures are exclusive of native plantations. (One hectare equals 2.4711 acres).

TERRITORY OF NEW GUINEA.—PLANTATIONS, 30th JUNE, 1929.

Particulars.	Government. Plantations.	Privately owned Plantations.	Total.
Area of Holdings hectares	1,662	164,940	166,602
Area Cleared "	1,087	84,029	85,116
Area Cleared and Planted "	892	79,214	80,106
Coconuts—			
Area Planted hectares	872	76,982	77,854
Area Bearing "	709	62,078	62,787
Cocoa—			
Area Planted hectares	..	465	465
Area Bearing "	..	254	254
Coffee—			
Area Planted hectares	..	9	9
Area Bearing "	..	3	3
Kapok—			
Area Planted hectares	..	..	124
Area Bearing .. .. . "	..	..	40
Native Food (a) hectares	49	2,534	2,583

NOTE.—Rubber is not tapped.
coconut palms not yet in bearing.

(a) Native food of all kinds is mostly grown between young

The area of plantations at various periods from 1885 to 1929 is shown hereunder. As in the case of the previous table, the figures are exclusive of native plantations:—

TERRITORY OF NEW GUINEA.—PLANTATIONS, 1885 TO 1929.

Year.	Total Area.	Area under Coconuts (Including Area not in Bearing).
	Acres.	Acres.
1885 ..	148	(a)
1895 ..	2,152	(a)
1911 ..	58,837	51,510
1914 ..	84,941	76,845
1924 ..	179,163	172,373
1929 ..	197,862	192,290

(a) Not recorded.

3. **Live Stock.**—There is little natural pasture in the Territory, but the coconut plantations are now of a sufficient area to maintain numerous live stock, the stock being depastured on the indigenous grasses growing between the rows of trees. In 1929 there were 952 horses, 13,817 cattle, 1,695 sheep, 6,400 goats, and 5,565 pigs (exclusive of the large number of pigs kept by the natives). (See also Official Year Book No. 16, page 677.)

4. **Timber.**—An investigation of the timber resources of the Territory has been made by the Commonwealth Forestry Adviser, and a report in connexion therewith was published in 1926. According to this report, while offering no prospects of immediate gain to large saw-milling interests the Territory possesses forest potentialities of a high order. The timber required for house and ship-building and for other purposes is mostly obtained locally. In North-East New Guinea the Neuendettelsauer Mission and the Holy Ghost Mission both possess up-to-date saw-milling plants, while most of the timber required in the Archipelago is supplied by the Sacred Heart Mission's saw-mill, and by a privately-owned mill, both at the eastern end of New Britain.

The Timber Ordinance 1922 provides for the issue of permits and licences to cut timber. Timber growing on native lands cannot be acquired by private purchasers directly from the natives, but must be obtained through the Administration. A royalty is to be paid on all timber exported. Eleven timber permits were issued in 1928-29.

5. **Fisheries.**—The wealth of the waters of the Territory has so far been little exploited. Fish is caught at many places along the coast to supply the small local demand of the natives and of the few resident Europeans. Pearl-shell is exported in fair quantities, while trepang, trochus-shell, and tortoise-shell also figure amongst the exports. The value of marine products exported in 1928-29 was £27,485, compared with £34,911 in the previous year.

6. **Mining.***—Except for gold there has been little mining in the Territory, and knowledge of the mineral resources is as yet but scanty. Gold has been discovered on the Waria, the Ramu, the Francisco, and the Markham Rivers, etc. Rich gold was discovered in the Morobe District in 1926; the field is not very extensive and is situated 60 miles inland. Communication has been established with the coast by a regular aeroplane service. Osmiridium is reported to have been found on the upper tributaries of the Ramu, and platinum on the Kabenau River. Copper has been discovered in the form of chalcopyrite and malachite in the Baining District. Iron occurs as magnesite and hæmatite in the Baining District, apparently in large quantities. Sulphur occurs in several localities in the volcanic regions of the Territory. Phosphates suitable for use in the making of manures are found in the Purdy Islands. Brown coal has been found on the mainland in the vicinity of Astrolabe Bay, and in the southern portion of New Ireland.

* Fuller details in regard to minerals in the Territory will be found in E. R. Stanley's Report on Salient Geological Features and Natural Resources of the Territory (printed as Appendix B. to the Report for 1921-22).

The following table shows the quantity of gold exported, and its value during the last five financial years :—

Year.	Quantity.		Value.
	Ounces.		£
1924-25	7,417		18,512
1925-26	10,067		25,169
1926-27	84,760		195,428
1927-28	113,874		256,216
1928-29	79,748		179,433

By the Mining Ordinance of 1923, private companies incorporated or registered in the Territory, two-thirds of whose shares are held by British subjects, became eligible to engage in prospecting and mining for mineral oil and coal. On the 30th June, 1929, 5 licences to search for mineral oil were in force.

§ 7. Trade.

1. **Total Trade.**—The value of the imports, exports, and total trade at various periods since 1887, and during each of the last five years, is given in the table hereunder :—

TERRITORY OF NEW GUINEA.—TRADE, 1887 TO 1929.

Year.	Imports.	Exports.	Total.
	£	£	£
1887 ..	17,133	19,580	36,713
1897 ..	36,713	31,352	68,065
1907 ..	166,585	97,563	264,148
1924-25	537,940	858,990	1,396,930
1925-26	568,339	1,105,158	1,673,497
1926-27	660,753	1,079,855	1,740,608
1927-28	811,832	1,471,026	2,282,858
1928-29	871,441	1,146,112	2,017,553

The import values are exclusive of money and Government stores. In 1928-29 the imports were distributed as follows :—From Australia, £327,716; United Kingdom, £132,755; America, £128,045; China, £34,856; Germany, £63,491; Japan, £18,805; India, £51,615; Burma, £44,138; other countries, £70,020.

2. **Principal Items of Imports.**—From Australia the principal items of imports are foodstuffs and beverages, tobacco, apparel, foot-wear, textiles, machinery, hardware, building material, etc.; from the United Kingdom textiles, apparel, machinery and hardware, whisky; from America petrol, kerosene, motor vehicles and lubricating oil, tobacco; from India rice and sacks; from Burma rice; from China rice and textiles; from Germany textiles, machinery and hardware, beverages, fancy goods, wood and wicker manufactures, motor vehicles and sewing machines; from Japan, textiles.

3. **Principal Items of Export.**—Values of the principal items of export for the last five years are shown hereunder :—

TERRITORY OF NEW GUINEA.—EXPORTS, VALUE OF ITEMS, 1924-25 TO 1928-29.

Commodity.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Copra ..	815,938	1,016,930	849,852	1,176,040	933,769
Cocoa ..	6,949	6,510	3,500	3,859	3,816
Stone and Ivory Nuts ..	312	456	152	..	153
Trepang ..	1,975	8,246	13,750	11,259	4,440
Shell ..	15,009	47,434	17,000	23,436	22,695
Tortoise Shell ..	295	413	173	216	350
Gold ..	18,512	25,169	195,428	256,216	179,433
Miscellaneous ..	..	..	..	..	1,456
Total ..	858,990	1,105,158	1,079,855	1,471,026	1,146,112

4. **Exports of Copra and Cocoa.**—The next table shows the quantities of these items exported during the last five years:—

**TERRITORY OF NEW GUINEA.—EXPORTS OF COPRA AND COCOA,
1924-25 TO 1928-29.**

Commodity.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	Tons.	Tons.	Tons.	Tons.	Tons.
Copra	39,151	45,806	47,613	65,285	60,435
Cocoa	135	113	65	73	72

Most of the copra is shipped direct to European and American ports.

5. **Banks.**—There are two banks operating in the Territory, the Commonwealth Bank of Australia, and the Bank of New South Wales.

§ 8. Shipping and Communication.

1. **General.**—A subsidized mail service between the Territory and Australia is maintained by Burns, Philp and Co. Ltd. There is a regular service between the East and Australia with Rabaul as a port of call. Shipping within the Territory is regulated by the *Coastal Vessels Regulations*, 1920, and the *Wharfrage and Berthage Regulations* made during the Military Administration of the Territory.

2. **Oversea Tonnage in 1928-29.**—The number and net tonnage of oversea vessels which entered and cleared the Territory during the year 1928-29 are shown hereunder:—

TERRITORY OF NEW GUINEA.—SHIPPING, 1928-29.

Nationality.	Vessels Entered.		Vessels Cleared.		Total.	
	Number.	Net Tonnage.	Number.	Net Tonnage.	Number.	Net Tonnage.
American	4	8,551	4	8,551	8	17,102
British	54	99,711	50	97,725	104	197,436
French	9	23,260	9	23,260	18	46,520
German	3	2,784	3	2,784	6	5,568
Japanese	4	3,922	4	3,922	8	7,844
Total	74	138,228	70	136,242	144	274,470

Country from which Entered or for which Cleared.	Vessels Entered.		Vessels Cleared.		Total.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
Australia	39	68,590	31	51,323	70	119,913
Caroline Islands	3	801	3	801	6	1,602
China	8	15,336	11	22,177	19	37,513
France	5	14,895	12	33,550	17	48,445
Fiji .. .. .	..	..	1	1,201	1	1,201
Holland .. .. .	..	..	1	2,894	1	2,894
Japan	1	3,121	1	1,445	2	4,566
New Caledonia	5	12,367	..	..	5	12,367
New Zealand	2	5,999	..	..	2	5,999
Ocean Island .. .. .	..	..	1	1,922	1	1,922
Singapore	1	879	1	879	2	1,758
United Kingdom	5	7,622	1	3,597	6	11,219
United States of America	5	8,618	7	16,453	12	25,071
Total	74	138,228	70	136,242	144	274,470

3. **Local Shipping.**—A service between Rabaul and the various outports not visited by the mail steamers is maintained by small steamers and motor craft.

4. **Land Communication.**—Means of communication on land are scanty. There are no railways. Roads lead from Rabaul to places within 30 or 40 miles, and there is a road 170 miles long in New Ireland. Elsewhere there are few roads outside plantations and the stations of the District Officers. The large rivers of the mainland are as yet but little used.

There is a high power wireless station at Bita Paka near Rabaul, and low power stations at the out-stations.

5. **Communication by Air.**—The discovery of gold in New Guinea has resulted in great aviation activity in the vicinity of the gold-fields. On account of the mountainous country and dense undergrowth between the coast and the gold-fields the task of transporting food and stores to the fields and of bringing the gold to the seaboard by land is an irksome and costly process. The fields are situated about 60 miles inland from Salamaua, and whereas aircraft cover the distance in approximately an hour, the nature of the country is such that a journey by other means occupies more than a week. (See Chapter VII.—Transport and Communication).

§ 9. Revenue and Expenditure.

1. **Revenue.**—Details of the revenue collected from various sources during each of the last two years are given hereunder :—

TERRITORY OF NEW GUINEA.—REVENUE, 1927-28 AND 1928-29.

Heading.	1927-28.		1928-29.	
	£	s. d.	£	s. d.
Revenue from Taxation (direct and indirect) ..	249,550	1 5	233,969	9 11
Revenue from Public Services and undertakings ..	50,504	15 2	57,696	16 0
Other receipts	49,744	14 4	60,273	18 7
Appropriation of former years	193	16 7	..	..
Reimbursement by Nauru of moneys expended by the Territory in the administration of Nauru from 1914 to 1921	14,587	6 5	..	..
	364,580	13 11	350,967	11 8

2. **Expenditure.**—The expenditure for the financial year 1928-29 was distributed as follows :—

TERRITORY OF NEW GUINEA.—EXPENDITURE, 1928-29.

Secretary and Central Administration	£18,363	Trade and Customs	£20,367
Justice	4,673	Agriculture	8,878
Treasury	38,137	Public Health	60,509
Audit	4,405	District Services	103,921
Lands and Survey	22,365	Miscellaneous	1,461
Native Affairs, Police, and Prisons	16,873		
Public Works	77,555	Total	377,507

NAURU.

1. **General.**—Nauru is an oval-shaped atoll about 12 miles in circumference having an area of 5,400 acres, of which approximately four-fifths is phosphate-bearing. It is situated in long. 166° E., and is 26 miles south of the Equator. Portion of the island between the sandy beach and the coral cliffs is fertile, and it is there that the native Nauruans have established themselves. With the exception of a small fringe round an inland lagoon, the plateau which contains the phosphate deposits possesses few food plants and is uninhabited, but portion of the area has been planted with fruit trees. The system of land tenure is governed by old custom, and, with the exception of small allotments held by the Government and Missions, the whole of the island is owned by individual natives. The climate is hot, but not unpleasant, the average shade temperature ranging between 72 and 95° F., and the average humidity between 70 and 80. The average rainfall is 120 inches, but droughts occasionally occur, and in 1916 and 1917 only 40 inches were received for the two years.

2. **History.**—The island was annexed by Germany in 1888, and prior to 1914 was part of the protectorate of German New Guinea.

In November, 1914, Nauru was occupied by a detachment from the Australian Expedition at Rabaul, and it was included in the cession of colonies made by Germany in 1919 to the Allied and Associated Powers, whose representatives agreed that a mandate over it should be given to His Majesty the King. On 2nd July, 1919, the British, Commonwealth, and New Zealand Governments agreed that the administration of the island (which, since 1915, had been in charge of an official appointed by the British Colonial Office) should be vested in an Administrator; the first Administrator was appointed for a term of five years by the Australian Government; his term of service having expired in February, 1926, it was extended for another five years. The Agreement between the three Governments was approved by the Commonwealth Parliament in the Nauru Island Agreement Act 1919, and is printed in the Schedule to that Act. The first Administrator appointed by the Commonwealth Government assumed duty in June, 1921.

The Mandate for Nauru, issued by the Council of the League of Nations in December, 1920, is in terms similar to that for the Territory of New Guinea.

3. **Administration.**—The Administrator has all the powers of government—administrative, legislative, and judicial—in the island. An advisory Council has been created which consists of two Europeans chosen by the Administrator, and two native chiefs elected by the natives. All expenses of administration are met from local revenue. Native industries such as canoe-building, fishing, mat-making, etc., are encouraged by the provision of prizes at annual competitions. A branch of the Commonwealth Savings Bank has been established. There is a co-operative store managed by the natives themselves, the books, however, being audited by Government officers. Natives are not allowed to carry firearms, and the use by them of intoxicating liquors and deleterious drugs is prohibited.

4. **Population.**—Figures for population from 1925 to 1929 are given hereunder:—

NAURU.—POPULATION, 1925 TO 1929.

Population.	31st December, 1925.	1st April, 1926.	1st April, 1927.	1st April, 1928.	1st April, 1929.
Europeans	124	117	115	131	134
Chinese	827	822	761	1,051	1,099
Nauruans (a)	1,239	1,251	1,266	1,297	1,365
Other South Sea Islanders	10	27	21	20	16

(a) The natives of Nauru are Micronesians.

5. **Health.**—There is no malaria, but cases occur of other diseases known in the Pacific. Venereal disease is rare, but at the end of 1929, 237 cases of leprosy were under treatment. An area has been set apart for the segregation of lepers, and the latest methods of treatment are applied to cope with the disease. Two hospitals are maintained on the island, one by the Administration for Nauruans, and one by the British Phosphate Commission for its employees. In common with other natives, the Nauruans are very susceptible to tuberculosis and influenza, and in 1921 an influenza epidemic caused the deaths of 230 islanders. Dysentery, both amœbic and bacillary, is endemic. The usual steps have been taken by the authorities to improve the water supply and to provide efficient sanitation generally. A baby clinic has been established to give help and advice to Nauruan mothers in regard to infant nurture.

6. **Education.**—On the 1st October, 1923, the Administration took over the education of the Nauruans and other native children, and native schools were established in four districts and at the leper station. Previously education had been looked after by the Missions subsidized by the Government. A school for European children is presided over by a teacher on loan from the Education Department of Victoria, who also supervises educational matters generally. The curriculum is similar to that of corresponding schools in Australia, and the teaching is, as far as possible, wholly in English. Education is compulsory between the ages of six and sixteen. After the termination of ordinary school attendance, twelve months are devoted to technical training. Officers from the Missions visit the schools to give religious and moral training. Three Nauruan boys are at present undergoing educational training in Australia.

7. **Religion.**—The London Missionary Society (Protestant) and the Sacred Heart of Jesus Mission (Roman Catholic) operate in Nauru.

8. **Phosphate Deposits.**—(i) *General.* Since 1906 the deposits have been worked by the Pacific Phosphate Company, which also worked the deposits on Ocean Island (about 165 miles east of Nauru and part of the Gilbert and Ellice Islands Colony administered by the Colonial Office). The quantity on the two islands has been estimated at not less than 100,000,000 tons, and the rock phosphate, as shipped, averages 85 per cent. to 88 per cent. of tribasic phosphate of lime. About 4,000,000 tons have already been removed.

The interests of the Pacific Phosphate Company in the two islands (though not in other islands in the Pacific in which it has workings) were bought by the British, Commonwealth, and New Zealand Governments in 1919 for £3,500,000, the purchase money being contributed in the proportions of 42, 42, and 16 per cent. respectively. The Agreement of 2nd July, 1919, provides for the working of the deposits by the British Phosphate Commission of three members, one appointed by each Government; and the three countries are to receive the output in the same proportions of 42, 42, and 16 per cent.

(ii) *Output.* The output from the two islands in 1913, the last year before the war, was 350,000 tons. During the five years 1923–24 to 1927–28 exports were as follows:—

NAURU AND OCEAN ISLAND.—EXPORT OF PHOSPHATES, 1923–24 TO 1927–28.

Year.		Total.	To Australia.	To New Zealand.	To United Kingdom.	To other Countries.
		Tons.	Per cent.	Per cent.	Per cent.	Per cent.
1923–24	.. ..	450,924	70.67	13.46	..	15.87
1924–25	.. ..	473,647	71.11	21.01	..	7.88
1925–26	.. ..	393,032	69.76	24.97	..	5.27
1926–27	.. ..	594,825	77.96	22.04	..	..
1927–28	.. ..	501,908	75.20	24.80	..	..

From Nauru alone, during the calendar year 1929, the export was 326,125 tons, of which 237,525 tons went to Australia, and 88,600 tons to New Zealand.

(iii) *Accounts of Commission.* A statement for the five years ended June, 1928, is given hereunder.

NAURU AND OCEAN ISLAND.—SALES OF PHOSPHATES, 1923-24 TO 1927-28.

Receipts from Sales of Phosphate, Etc.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
	£	£	£	£	£
Receipts from sales, etc. ..	695,940	705,293	611,654	780,070	666,992
F.o.b. cost, including interest on capital, Sinking fund, etc. ..	651,102	635,675	607,256	720,439	659,122

The amount due by the Commission to the partner Governments for purchase money and other capital sums was £3,666,457 on 30th June, 1921, and at 30th June, 1928, this had been reduced to £3,411,112. The contribution to the sinking fund paid by the Commission provides for interest at 6 per cent. and extinction of the capital sum in 50 years from 1st July, 1920.

(iv) *Employees.* Apart from a limited number of Europeans and a few Pacific Islanders the employees are Chinese, engaged under a three years' contract. A few Nauruans are from time to time employed, but they are not partial to sustained labour of any kind.

9. *Trade.*—Information regarding imports and exports for years 1925 to 1929 is appended herewith:—

NAURU.—IMPORTS AND EXPORTS, 1925 TO 1929.

Heading.	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£
Imports	63,576	104,117	82,650	240,229	101,692
Exports—	tons.	tons.	tons.	tons.	tons.
Phosphate	224,260	274,935	318,185	318,845	326,125
Copra	170	117	263	181	..

10. *Revenue and Expenditure.*—The revenue and expenditure of the Administration during the years 1925 to 1929 were as follows:—

NAURU.—REVENUE AND EXPENDITURE, 1925 TO 1929.

Heading.	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£
Revenue	15,175	16,424	17,041	19,903	19,936
Expenditure	15,257	13,963	17,243	18,267	17,860

Of the revenue in 1929, £8,585 was royalty on phosphate, £3,726 consisted of Customs receipts, £1,592 of capitation taxes, and £761 of harbour dues. The total credit balance on the 31st December, 1929, amounted to £17,871.

CHAPTER XVI.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—In earlier issues of the Year Book will be found a brief reference to the pastoral industry in Australia prior to the year 1860. (See Year Book No. 6, page 330.)

2. **Subsequent Statistics.**—While the statistical records of live stock in Australia prior to the year 1860 are somewhat defective, from that year onwards fairly complete particulars are available for most of the States. At the present time, statistics of live stock are collected annually in all the States principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, these particulars were not collected in South Australia, and similar gaps occur on the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for Australia for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Live Stock.**—Particulars concerning the numbers of each of the principal kinds of live stock in Australia at decennial intervals from 1860 to 1920, and from 1924 onwards in single years, are given in the following table, and are shown continuously in the graphs hereinafter.

During the sixty-eight years covered by the table the live stock of Australia increased considerably, horses 350 per cent., cattle 186 per cent., sheep 414 per cent., and pigs 159 per cent. The average annual increases which these aggregates represent are as follow :—Horses, 2.24 per cent. ; cattle, 1.56 per cent. ; sheep, 2.44 per cent. ; and pigs, 1.41 per cent.

LIVE STOCK.—AUSTRALIA, 1860 TO 1928.

Year.	Horses.	Cattle.	Sheep.(a)	Pigs.
1860	431,525	3,957,915	20,135,286	351,096
1870	716,772	4,276,326	41,593,612	543,388
1880	1,068,774	7,527,142	62,184,252	815,776
1890	1,521,598	10,299,816	97,881,221	891,138
1900	1,609,654	8,640,225	70,602,995	950,349
1910	2,165,866	11,744,714	98,066,046	1,025,850
1920	2,415,510	13,499,737	81,795,727	764,406
1924	2,292,050	13,309,473	93,154,953	980,009
1925	2,250,361	13,279,785	103,563,218	1,128,374
1926	2,122,516	11,963,278	104,267,101	989,009
1927	2,040,691	11,617,056	100,827,476	878,207
1928	1,942,753	11,300,757	103,430,773	910,181

(a) See note to Table in § 4, 2 hereinafter.

4. **Fluctuations.**—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1868, 1877, 1883-4, 1892, 1893, 1895, and subsequent years, 1901-2, 1912, 1914-15, 1918, 1919, 1922-23, 1925-26, and again in 1927-28, in which latter years Central and Northern Queensland experienced one of the driest periods on record, and a heavy mortality of stock.

As an offset to these visitations, good seasons invariably supervene on the dry periods, and the large natural increases occurring under these conditions greatly facilitate the process of restocking, thus bearing convincing testimony to the extraordinary recuperative powers of the country.

The years in which the numbers of live stock attained their maxima are as follows:—Horses, 1918, 2,527,149; cattle, 1921, 14,441,309; sheep, 1891, 106,421,068; and pigs, 1917, 1,169,365.

5. Live Stock in Relation to Population.—The number of each kind of live stock per head of the population of Australia has varied during the past sixty-eight years in the manner shown in the succeeding table:—

LIVE STOCK PER HEAD OF POPULATION.—AUSTRALIA, 1860 TO 1928.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860 ..	0.38	3.45	17.58	0.31	1920 ..	0.44	2.49	15.11	0.14
1870 ..	0.43	2.60	25.24	0.33	1924 ..	0.39	2.27	15.86	0.17
1880 ..	0.48	3.37	27.87	0.37	1925 ..	0.38	2.22	17.28	0.19
1890 ..	0.48	3.17	31.06	0.28	1926 ..	0.35	1.96	17.06	0.16
1900 ..	0.43	2.29	18.75	0.25	1927 ..	0.33	1.86	16.14	0.14
1910 ..	0.49	2.65	22.16	0.23	1928 ..	0.31	1.78	16.32	0.14

6. Live Stock in Relation to Area.—The numbers of live stock per square mile in the several States and Territories of Australia are given in the following table:—

LIVE STOCK PER SQUARE MILE, 1928.

States and Territories.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales (a)	1.83	8.99	162.18	1.01
Victoria ..	4.69	14.84	187.72	2.53
Queensland ..	0.78	7.65	27.61	0.32
South Australia ..	0.54	0.69	18.63	0.17
Western Australia ..	0.17	0.86	9.16	0.05
Tasmania ..	1.33	7.97	76.32	1.84
Northern Territory ..	0.07	1.47	0.02	0.01
Federal Capital Territory (a)	0.98	5.61	220.44	0.05
Total ..	0.65	3.80	34.77	0.31

(a) 30th June, 1929.

7. Minor Classes of Live Stock.—The numbers of minor classes of live stock returned for 1928 were as follows:—Goats, 153,168; camels, 7,753; mules and donkeys, 15,170; and ostriches, 218. Of these, goats were most numerous in Queensland; camels, mules and donkeys in Western Australia; and ostriches in South Australia. In the raising of goats, attention has in recent years been devoted to the angora goat and its product (mohair), and about 9,000 angora goats are included in the total of 153,168 goats shown above. Of these, 2,035 were in New South Wales, 938 in Tasmania, 1,860 in Western Australia, 744 in South Australia, and 2,938 in Queensland, while the quantity of mohair produced in the latter State in 1928 was set down at 2,137 lbs., and the number of skins placed on the market was returned as 648.

8. Net Exports of Principal Pastoral Products.—The quantities by which the exports of the principal pastoral products of Australia exceeded the imports for the years 1924–25 to 1928–29 are as follow:—

NET EXPORTS OF PASTORAL PRODUCTS.—AUSTRALIA, 1924-25 TO 1928-29.

Products.	Unit of Quantity.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
QUANTITIES.						
Animals (living)—						
Cattle	No.	9,674	9,898	10,093	11,131	8,452
Horses	"	4,604	5,255	5,276	5,627	5,356
Sheep	"	4,143	20,331	26,218	30,871	29,545
Bones	cwt.	23,748	27,329	18,394	14,486	14,060
Glue-pieces and Sinews	"	-11,055	-8,757	-12,840	-13,469	-18,420
Glycerine	lb.	-489,113	-603,485	-553,950	-571,266	-388,800
Hair	"	(a)	(a)	(a)	(a)	(a)
Hoofs	cwt.	8,340	20,510	8,371	13,543	9,852
Horns	"	(a)	(a)	(a)	(a)	(a)
Meats—						
Frozen Beef	lb.	283,584,278	214,053,586	112,124,913	169,094,472	189,090,102
Frozen Mutton and Lamb	"	50,224,650	85,679,850	93,514,533	46,359,146	84,905,335
Frozen Rabbits and Hares	pair	3,415,334	4,043,511	3,298,372	3,433,098	3,598,075
Frozen, Other	lb.	9,141,545	8,935,456	3,893,937	7,592,372	7,127,553
Potted, and Extract of	"	(a)	(a)	(a)	(a)	(a)
Preserved in Tins, etc.	lb.	8,687,019	10,209,971	8,674,251	3,760,147	3,168,759
Other (excluding Bacon and Ham)	"	314,867	211,403	166,537	322,117	447,495
Sausage Casings	cwt.	26,860	24,119	24,222	22,714	31,489
Skins—						
Hides	No.	900,274	699,080	720,065	1,034,317	816,980
Sheep	"	6,016,231	8,007,249	8,437,652	11,315,072	11,026,291
Rabbit and Hare	cwt.	116,522	134,024	126,745	112,547	100,655
Other (including Undressed Furs)	"	(a)	(a)	(a)	(a)	(a)
Tallow	cwt.	855,596	824,974	833,336	648,592	768,314
Wool—						
Greasy	lb.	489,669,907	767,812,768	709,438,954	682,913,332	759,443,979
Scoured	"	39,221,259	49,972,194	52,110,342	55,397,621	46,019,059
Tops	"	4,090,958	5,219,085	4,519,357	2,559,159	872,774

NOTE.—The minus sign — signifies net imports. (a) Quantity not available.

The values of the net exports for the same five years are furnished in the next table, and amount to no less a total than £388,021,733 for the period, or an average of £77,604,347 per annum, of which wool represents 80.51 per cent. Skins, meat and tallow rank next in order of importance.

NET EXPORTS OF PASTORAL PRODUCTS.—AUSTRALIA, 1924-25 TO 1928-29.

Products.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
VALUES.					
Animals (living)—	£	£	£	£	£
Cattle	43,628	32,632	43,663	41,352	21,205
Horses	28,062	-8,665	35,313	65,285	79,257
Sheep	29,793	27,958	15,390	40,512	43,447
Bones	23,031	22,407	11,783	8,932	10,775
Glue-pieces and Sinews	10,363	3,071	-6,442	-2,503	-6,956
Glycerine	-10,898	-15,586	-21,284	-15,097	-6,809
Hair	-73,556	-63,681	-44,354	-43,054	-35,660
Hoofs	6,011	10,459	4,768	7,826	6,162
Horns	47,216	36,102	21,291	25,488	24,385
Meats—					
Frozen Beef	4,138,729	3,263,859	1,626,640	2,377,871	2,888,284
Frozen Mutton and Lamb	1,520,655	2,430,430	2,057,443	1,188,388	2,165,321
Frozen Rabbits and Hares	310,683	399,039	303,752	309,149	331,456
Frozen, Other	165,002	166,538	78,956	142,475	180,422
Potted, and Extract of	-49,953	-30,580	-38,673	-60,662	-76,328
Preserved in Tins, etc.	247,405	328,888	279,167	100,110	84,029
Other (excluding Bacon and Ham)	4,058	3,083	1,671	6,243	11,086
Sausage Casings	208,673	259,299	179,434	136,567	144,063
Skins—					
Hides	890,639	713,589	605,600	1,401,029	886,430
Sheep	3,773,328	3,413,809	3,330,745	4,385,138	4,526,170
Rabbit and Hare	2,482,933	2,874,582	2,832,128	2,490,709	2,624,253
Other (including Undressed Furs)	328,325	569,744	1,026,667	831,402	277,477
Tallow	1,708,308	1,584,465	1,402,020	1,043,311	1,366,341
Wool—					
Greasy	55,297,455	56,429,712	53,224,169	58,295,914	55,592,624
Scoured	6,524,471	5,537,671	5,726,308	6,621,937	5,519,161
Tops	1,119,849	1,035,107	822,713	488,199	166,957
Total Values	78,769,210	79,023,942	73,518,868	79,886,161	76,823,552

NOTE.—The minus sign — signifies net imports.

§ 2. Horses.

1. **Suitability of Australia for Horse-breeding.**—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognized. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages are utilized to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages, the Australian horse, whether of the heavy draught, medium weight, or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes. During the war, Australian horses were found to be well adapted for all purposes, especially in Palestine and Sinai, where the rigours of the desert campaign fully tested their powers of endurance.

2. **Distribution throughout Australia.**—The States of New South Wales, Queensland, and Victoria together depasture more than 75 per cent. of the total number of horses in Australia. In the following table figures are given for each State, etc., for each of the last five years :—

HORSES.—NUMBER, 1924 TO 1928.

Year.	N.S.W. (a)	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.C.T. (a)	Total.
1924	646,110	473,236	659,023	255,022	175,116	37,091	45,059	1,393	2,292,050
1925	649,534	463,051	637,436	244,111	170,563	37,785	46,380	1,501	2,250,361
1926	622,009	447,988	570,690	234,352	166,463	36,830	42,801	1,383	2,122,516
1927	598,377	428,666	547,412	224,027	165,021	35,872	40,108	1,208	2,040,691
1928	567,371	412,867	522,490	205,865	160,876	34,908	37,452	924	1,942,753

(a) 30th June year following.

The number of horses attained its maximum in Australia during 1918, when 2,527,149 were recorded. Since that date, however, a gradual decline has taken place in all divisions of the Commonwealth, except Northern Territory, and the number for 1928 is the lowest recorded since 1909. The decrease for Australia during the period amounted to 584,396.

Particulars regarding the number of horses in Australia from 1860 onwards, may be ascertained from the graph herein.

3. **Proportions in the Several States and Territories.**—The percentages of the number of horses in the several States and Territories on the total for Australia for the past five years are as follows :—

HORSES.—PERCENTAGE IN EACH STATE, 1924 TO 1928.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.C.T.	Total.
	%	%	%	%	%	%	%	%	%
1924	28·19	20·65	28·75	11·13	7·64	1·62	1·96	0·06	100·00
1925	28·86	20·58	28·32	10·85	7·58	1·68	2·06	0·07	100·00
1926	29·30	21·11	26·89	11·04	7·84	1·73	2·02	0·07	100·00
1927	29·32	21·00	26·83	10·98	8·09	1·76	1·97	0·05	100·00
1928	29·20	21·25	26·89	10·60	8·28	1·80	1·93	0·05	100·00

The relative changes in distribution are insignificant, the greatest alteration being a decrease of under 2 per cent. in Queensland.

4. **Relation to Population.**—In proportion to population, horses are much more numerous in the Northern Territory than in any other of the principal divisions of Australia. Queensland is next in order, while Tasmania has the smallest number of horses per head. The number per head of population has declined in all the statistical divisions since 1924. Particulars for the past five years are as follows :—

HORSES.—NUMBER PER HEAD OF POPULATION, 1924 TO 1928.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	All States
1924 ..	0·29	0·29	0·79	0·47	0·48	0·17	12·60	0·46	0·39
1925 ..	0·28	0·27	0·74	0·44	0·46	0·17	12·69	0·38	0·38
1926 ..	0·26	0·26	0·65	0·41	0·44	0·17	10·98	0·28	0·35
1927 ..	0·25	0·25	0·61	0·39	0·43	0·17	9·47	0·21	0·33
1928 ..	0·23	0·23	0·57	0·36	0·40	0·16	9·41	0·11	0·31

5. **Comparison with other Countries.**—The number of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, is as follows :—

HORSES.—NUMBER IN PRINCIPAL COUNTRIES.

Country.	Date.	Number of Horses (,000 omitted).	Country.	Date.	Number of Horses (,000 omitted).
Soviet Republics ..	1928	32,207	Union of South Africa	1926	856
U.S. of America ..	1928	14,029	Cuba ..	1927	759
Argentine Republic ..	1922	9,432	Czecho-Slovakia ..	1925	740
Brazil ..	1920	5,254	Dutch East Indies ..	1927	707
China ..	1916	4,401	Spain ..	1925	698
Poland ..	1927	4,127	Turkey ..	1926	639
Germany ..	1928	3,711	Sweden ..	1928	628
Canada ..	1928	3,376	Lithuania ..	1928	611
France ..	1928	2,936	Uruguay ..	1924	522
India (British and Native) ..	1927	2,192	Denmark ..	1928	519
Rumania ..	1928	1,945	Paraguay ..	1918	490
Australia ..	1928	1,943	Bulgaria ..	1926	482
Japan ..	1927	1,495	Irish Free State ..	1928	434
United Kingdom ..	1928	1,204	Finland ..	1928	394
Jugo-Slavia ..	1928	1,109	Latvia ..	1928	365
Mexico ..	1926	1,036	Netherlands ..	1921	364
Italy ..	1918	990	Philippine Islands ..	1927	336
Colombia ..	1926	980	Chile ..	1925	324
Hungary ..	1928	918	New Zealand ..	1928	307

6. **World's Totals.**—Several countries do not issue annual statistics of live stock, the information available consisting of censuses or estimates made at varying intervals. It is not possible, therefore, to give world aggregates for the different classes of stock year by year, nor to make a satisfactory comparison between the totals for consecutive years. In order, however, to give some idea of the latest position as regards live stock and the changes that have taken place as compared with pre-war years, the following information has been taken from the Year Book issued by the International Institute of Agriculture. The list of countries included is fairly complete, but China, which possesses large numbers of horses, is omitted, as also are certain parts of Asiatic Russia, together with a few other countries. While for some countries the figures are the result of careful enumeration, in the case of others they are merely approximations. The totals, therefore, can be regarded as a general indication only of the position at the dates shown. The figures for horses are as follows :—

HORSES.—WORLD'S TOTALS, 1913 AND 1927.

Continents, etc.	Number at the date nearest—		Increase (+) or Decrease (—) in 1927.	
	1913.	1927.	Actual Figures.	Percentages.
	,000	,000	,000	%
Europe (excluding Soviet Republics) ..	22,698	22,863	+ 165	+ 0·7
Union of Socialist Soviet Republics ..	35,522	31,258	— 4,264	—12·0
North and Central America ..	26,134	20,465	— 5,669	—21·7
South America ..	18,162	17,653	— 509	— 2·8
Asia (excluding Soviet Republics) ..	4,914	5,394	+ 480	+ 9·8
Africa ..	1,692	2,079	+ 387	+22·9
Oceania ..	2,976	2,445	— 531	—17·8
Total ..	112,098	102,157	— 9,941	— 8·9

Compared with the pre-war totals reductions have taken place in all the continents, with the exception of Africa, where the number of horses is relatively insignificant. The greatest decrease occurred in North and Central America, viz. :—5,669,000, largely as the result of the decline in the United States.

7. Oversea Trade in Horses.—(i) *Exports.* Australia's export trade in horses has fluctuated considerably since the war, and is now far below that of earlier years. For instance, during the period 1901–5 the average number of horses exported was over 18,000, whereas during the last five years the figure was under 6,000. The total number of horses exported during that period amounted to 27,820, valued at £760,425, or equal to an annual average of 5,564 for £152,085. The average export price for the period was £27 6s. 8d.; 85 per cent. of the horses exported went to India, where they are largely used for remount purposes.

(ii) *Imports.* The number of horses imported into Australia is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, principally from the United Kingdom and New Zealand. The average value per head of the horses imported during the last five years was £331 9s. 2d., as compared with £27 6s. 8d. per head for the exports for the same period. The average number imported per annum was, however, only 339, and the average annual value, £112,233. The following table gives the imports, exports, and net exports of horses during each of the years from 1924–25 to 1928–29 :—

HORSES.—IMPORTS AND EXPORTS, AUSTRALIA, 1924–25 TO 1928–29.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1924–25 ..	356	132,652	4,960	160,714	4,604	28,062
1925–26 ..	355	135,124	5,610	126,469	5,255	8,655
1926–27 ..	343	111,297	5,619	146,610	5,276	35,313
1927–28 ..	300	87,065	5,936	152,350	5,636	65,285
1928–29 ..	339	95,025	5,695	174,232	5,356	79,257

NOTE.—The minus sign — signifies net imports.

§ 3. Cattle.

1. Purposes for which Raised.—In all the States, cattle-raising is carried out on a more or less extensive scale, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry led to a considerable increase in numbers and improvement in quality of the dairy herds in Victoria, New South Wales, and Southern Queensland in particular, the portion of Australia in the temperate zone being the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts, i.e., in the northern parts of Queensland, in the Northern Territory, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Australia.**—Until 1880, New South Wales occupied the leading position as a cattle-raising State, but in that year Queensland took first place, which it has since maintained. The graph herewith shows a rapid increase in the number of cattle in Australia up to the year 1894, when 12,311,617 head were depastured. From 1895 onwards, however, the effects of droughts and the ravages of tick fever reduced the number to 7,062,742 in 1902. Following the disastrous drought which terminated in the latter year, the herds were gradually built up, and despite recurring droughts, they continued to increase in recent years until the maximum number of 14,441,309 cattle was attained in 1921. The decline in the frozen beef trade and the droughts of 1922–23 and 1925–26, which particularly affected the beef cattle areas of New South Wales and Queensland, were mainly responsible for the heavy decreases recorded in both these States during recent years.

The number of cattle in the several States and Territories during each of the last five years is as follows :—

CATTLE.—NUMBER, 1924 TO 1928.

Year.	N.S.W. (a)	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor.Ter.	Fed. Cap. Ter. (a)	Total.
1924	2,871,196	1,605,554	6,454,653	400,423	891,564	225,740	855,285	5,058	13,309,473
1925	2,931,818	1,513,787	6,436,645	373,597	835,911	212,373	970,342	5,312	13,279,785
1926	2,813,144	1,435,761	5,464,845	340,007	827,303	213,112	863,597	5,509	11,963,278
1927	2,848,654	1,327,077	5,225,804	316,314	846,735	210,894	835,390	6,188	11,617,056
1928	2,784,615	1,304,426	5,128,341	263,016	837,527	208,812	768,751	5,269	11,300,757

(a) 30th June year following.

3. **Proportion in each State.**—Percentages showing the relative importance of the various cattle-breeding States during the years 1924 to 1928 are given hereunder :—

CATTLE.—PERCENTAGE IN EACH STATE, 1924 TO 1928.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Total.
	%	%	%	%	%	%	%	%	%
1924 ..	21.57	12.06	48.50	3.01	6.70	1.69	6.43	0.04	100.00
1925 ..	22.08	11.40	48.47	2.81	6.29	1.60	7.31	0.04	100.00
1926 ..	23.51	12.00	45.68	2.84	6.92	1.78	7.22	0.05	100.00
1927 ..	24.52	11.42	44.98	2.72	7.29	1.82	7.19	0.06	100.00
1928 ..	24.64	11.54	45.38	2.33	7.41	1.85	6.80	0.05	100.00

Queensland contains within its borders nearly one half of the cattle-herds of Australia. Despite decreases during recent years the percentage of cattle in Queensland on the total for Australia amounted to 45.38 in 1928. The largest relative gain since 1924 occurred in New South Wales, whilst a slight increase was recorded in Western Australia, Tasmania, and the Northern Territory.

4. **Relation to Population.**—The number of cattle per head of population varies considerably in the several States, as may be seen from the following table :—

CATTLE.—NUMBER PER HEAD OF POPULATION, 1924 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	All States.
1924 ..	1.27	0.97	7.73	0.74	2.45	1.03	237.75	1.69	2.27
1925 ..	1.28	0.90	7.47	0.68	2.24	0.98	265.41	1.35	2.22
1926 ..	1.20	0.84	6.19	0.60	2.18	0.99	221.55	1.12	1.96
1927 ..	1.20	0.76	5.81	0.55	2.16	0.98	191.56	1.08	1.86
1928 ..	1.14	0.74	5.59	0.45	2.06	0.96	193.06	0.65	1.78

5. **Comparison with other Countries.**—In the following comparisons of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case:—

CATTLE.—NUMBER IN VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle (,000 omitted).	Country.	Date.	No. of Cattle (,000 omitted).
India (British and Native) ..	1927	147,950	Rumania	1928	4,436
Soviet Republics ..	1928	66,792	Cuba	1927	4,786
U.S. of America ..	1928	55,751	Tanganyika Territory	1926	4,706
Argentine Republic ..	1922	37,065	Czecho-Slovakia ..	1925	4,691
Brazil	1920	34,271	Dutch East Indies ..	1927	4,442
Germany	1928	18,386	Siam	1927	4,128
China	1921	15,973	Irish Free State ..	1928	4,125
France	1928	15,005	Spain	1925	3,794
Australia	1928	11,301	Jugo-Slavia	1928	3,654
Union of South Africa	1928	10,478	French Equatorial and West Africa ..	1924	3,471
Canada	1928	8,793	Kenya	1926	3,413
Poland	1927	8,602	New Zealand	1928	3,274
Uruguay	1924	8,432	Denmark	1928	3,016
Madagascar	1925	7,659	Nigeria	1927	2,997
United Kingdom ..	1928	7,240	Sweden	1928	2,898
Turkey	1926	6,537	Rhodesia	1927	2,716
Colombia	1926	6,500	Bolivia	1926	2,320
Italy	1918	6,240	Venezuela	1922	2,278
Mexico	1926	5,584	Austria	1923	2,162
Paraguay	1918	5,500	Netherlands	1921	2,063

6. **World's Totals.**—The information in the appended table has been taken from the returns published by the International Institute of Agriculture at Rome. The figures given therein are subject to the limitations previously noted in respect to horses (See § 2, 6 *ante*).

CATTLE.—WORLD'S TOTALS, 1913 AND 1927.

Continents, etc.	Number at the date nearest—		Increase (+) or Decrease (–) in 1927.	
	1913.	1927.	Actual Figures.	Percentages.
	,000	,000	,000	%
Europe (excluding the U.S.S.R.) ..	98,764	100,339	+ 1,575	+ 1.6
Union of Socialist Soviet Republics ..	60,280	67,835	+ 7,555	+12.5
North and Central America	76,485	79,415	+ 2,930	+ 3.8
South America	86,662	101,053	+14,391	+16.6
Asia (excluding the U.S.S.R.) ..	131,300	143,927	+12,627	+ 9.6
Africa	34,537	51,270	+16,733	+48.4
Oceania	13,859	15,476	+ 1,617	+11.7
Total	501,887	559,315	+57,428	+11.4

The number of cattle has increased in all continents since 1913, the most notable advances being in Africa and South America. In these continents the development of the cattle industry has been most marked, the number of cattle having increased by more than 16 and 14 million head respectively since the pre-war year.

7. **Imports and Exports of Cattle.**—Although the various products of the cattle-raising industry bulk largely in the export trade of Australia, the export of live cattle has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for the purpose of breeding. Details are as follows:—

CATTLE.—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1924-25 ..	70	2,318	9,744	45,946	9,674	43,628
1925-26 ..	173	15,743	10,071	48,375	9,898	32,632
1926-27 ..	103	4,412	10,196	48,075	10,093	43,663
1927-28 ..	89	3,553	11,220	44,905	11,131	41,352
1928-29 ..	96	17,761	8,548	38,966	8,452	21,205

The average value of the cattle imported during the last five years was £68 4s. 8d. per head, while the average value of the cattle exported during the same period was £4 12s. 5d. As previously stated, the imported cattle were required principally for stud purposes.

8. Cattle Slaughtered.—The number of cattle slaughtered during each of the years 1924 to 1928 is given hereunder :—

CATTLE (INCLUDING CALVES) SLAUGHTERED, 1924 TO 1928.

Year.	N.S.W. (a)	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	N. Ter.	Fed. Cap. Ter. (a)	Total.
1924	818,683	499,840	893,169	155,050	95,648	36,154	6,630	143	2,505,317
1925	825,628	523,960	778,060	157,210	110,286	36,824	2,000	456	2,434,424
1926	809,810	499,519	567,640	143,747	101,948	32,989	1,369	2,784	2,159,806
1927	694,527	469,610	739,995	142,557	101,146	36,249	1,854	2,924	2,188,862
1928	778,994	466,576	685,196	127,627	100,982	36,264	2,065	2,074	2,199,778

(a) For year ended 30th June of year following.

9. Production and Consumption of Beef.—The production of beef in Australia during the three years ended 1928-29 was estimated at 1,105,323,400 lbs. per annum. The requirements of the local market absorbed 943,794,700 lbs., approximately 85 per cent., leaving a balance of 15 per cent., which was exported as frozen and canned beef. The annual consumption of beef per head of population in Australia averaged 152 lbs. compared with 52 lbs. in the United States of America, 69 lbs. in Canada, and 71 lbs. in the United Kingdom for the same period.

10. Export of Beef Preserved by Cold Process.—The establishment of the frozen meat export trade about the year 1882 provided an outlet for the surplus stock of Australia, and since that date the trade in frozen beef has grown to large proportions, the quantities and values exported during the past five years being as follows, viz. :—1924-25, 283,620,687 lbs., £4,140,087; 1925-26, 214,089,981 lbs., £3,264,920; 1926-27, 112,198,096 lbs., £1,627,998; 1927-28, 169,098,425 lbs., £2,377,967; and 1928-29, 189,090,357 lbs., £2,888,287. The largest purchaser of Australian beef is the United Kingdom, which during the year 1928-29 took £1,599,740 worth, or about 55 per cent. of the total shipments. Other importing countries in order of importance were Belgium, Germany, Philippine Islands, and Egypt. These countries, together with the United Kingdom, accounted for 85 per cent. of the total exports.

§ 4. Sheep.

1. Initiation of the Pastoral Industry.—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and, while it would appear that the introduction of the merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. **Distribution throughout Australia.**—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained the lead in sheep-raising which naturally attached to it as the portion of Australia in which settlement was first effected. Within its borders is contained generally one half of the flocks of Australia, and in the returns for the years 1924 to 1926 even this high percentage was exceeded.

Fluctuations in the number of sheep recorded for each year in Australia from 1860 onwards may be seen from the graph accompanying this chapter. Five marked periods of decline depleted the numbers at successive intervals, but these gaps were as quickly restored, and, despite a decrease of $3\frac{1}{2}$ millions during the drought of 1922, the number reported in 1926 was 104,267,101, the greatest number since the maximum year 1891, when 106,421,068 sheep were depastured. A decline occurred in 1927, but owing to favourable conditions during 1928 the number rose again to 103,430,773. The drought which followed in 1929 was not accompanied by a decline in the flocks, as at the 31st December it was estimated that the number reached 106,125,973, or slightly below the record number in 1891. This development in spite of the annual slaughter of some ten to twelve million sheep and lambs for the mutton and lamb trade is a striking commentary on the soundness of the sheep and wool industry in Australia.

The number of sheep in the several States and Territories for each year from 1925 to 1929 was as follows :—

SHEEP.—NUMBER, 1925 TO 1929.

Year.	New South Wales. (a)	Victoria.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Nor. Ter.	Fed. Cap. Ter. (a)	Total.
1925	53,687,749	13,740,500	20,663,323	6,810,495	6,861,795	1,619,075	8,030	172,251	103,563,218
1926	55,705,923	14,919,653	16,860,772	7,283,945	7,458,766	1,807,558	6,407	224,077	104,267,101
1927	50,510,000	15,557,067	16,642,385	7,542,345	8,447,480	1,904,955	9,585	213,659	100,827,476
1928	50,134,950	16,498,222	18,509,201	7,079,947	8,943,002	2,000,605	7,635	207,211	103,430,773
1929b	50,740,000	17,427,203	19,975,752	6,186,252	9,556,823	2,000,000	7,500	232,448	106,125,978

(a) 30th June year following.

(b) Estimate as at 31st December, 1929.

3. **Proportion in the Several States and Territories.**—Particulars concerning the relative positions of the several States and Territories with respect to the total flocks of Australia during the years 1924 to 1928 are given hereunder :—

SHEEP.—PERCENTAGE IN EACH STATE, 1924 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Total.
	%	%	%	%	%	%	%	%	%
1924 ..	50.38	13.58	20.42	6.83	6.87	1.73	0.01	0.18	100.00
1925 ..	51.84	13.27	19.95	6.58	6.62	1.56	0.01	0.17	100.00
1926 ..	53.43	14.31	16.17	6.99	7.15	1.73	0.01	0.21	100.00
1927 ..	49.99	15.46	16.54	7.50	8.40	1.89	0.01	0.21	100.00
1928 ..	48.52	15.95	17.90	6.84	8.65	1.93	0.01	0.20	100.00

Apart from the effect of drought the percentage of sheep depastured in the different States shows little change. The most noteworthy alteration was a loss of 1.47 per cent. in New South Wales and a gain of 1.36 per cent. in Queensland during 1928 as compared with the previous year.

4. **Relation to Population.**—The relation of the flocks of the several States and Territories to the population at the end of each year from 1924 to 1928 is as follows :—

SHEEP.—NUMBER PER HEAD OF POPULATION, 1924 TO 1928.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Total.
1924 ..	20.82	7.64	22.79	11.81	17.57	7.34	1.92	55.30	15.86
1925 ..	23.36	8.16	23.99	12.35	18.44	7.46	2.20	43.76	17.28
1926 ..	23.73	8.72	19.11	12.86	19.69	8.42	1.64	45.53	17.06
1927 ..	20.95	8.93	18.51	13.10	21.53	8.82	2.20	37.25	16.14
1928 ..	20.52	9.37	20.19	12.22	22.03	9.24	1.92	25.62	16.32

5. **Comparison with other Countries.**—As regards the size of its flocks, and the quantity and quality of wool produced, Australia has long occupied the leading position amongst the sheep-raising countries of the world. The following comparison taken mainly from the Year Book of the International Institute of Agriculture gives the latest figures relative to the number of sheep in the principal wool-producing countries. The leading position, so long held by Australia, is now occupied by the United Socialist Soviet Republics. This interchange of positions is due to the fact that figures regarding the number of sheep have been revised, and now include those depastured in Europe and Asia. Efforts are being made by the Soviet Government to improve the quality of the wool and the quantity shorn per fleece, and to this end merino sheep were imported from America and Germany in 1927. In 1928-29, 2,031 sheep valued at £6,017 were exported from Australia to Russia for breeding purposes. The production of wool, however, only amounted to about 370 million lbs. during the year 1927-28.

SHEEP.—NUMBER IN VARIOUS COUNTRIES.

Country.	Date.	No. of Sheep (,000 omitted).	Country.	Date.	No. of Sheep (,000 omitted).
Soviet Republics ..	1928	124,757	Jugo-Slavia ..	1928	7,722
Australia ..	1929	106,126	Greece ..	1928	6,920
U.S. of America ..	1928	47,171	French Equatorial and		
Union of South Africa	1928	42,500	West Africa ..	1927	6,328
Argentine Republic ..	1922	36,209	Algeria ..	1928	5,614
India (British and			Iraq (a) ..	1926	5,055
Native) ..	1927	35,703	Bolivia ..	1926	4,220
New Zealand ..	1928	27,134	Chile ..	1925	4,095
United Kingdom ..	1928	23,968	Portugal ..	1920	3,851
Uruguay ..	1927	22,500	Germany ..	1928	3,626
China ..	1916	22,232	Canada ..	1928	3,416
Spain ..	1925	20,067	Irish Free State ..	1928	3,264
Rumania ..	1928	12,801	Kenya ..	1926	2,756
Italy ..	1918	11,754	Mexico ..	1926	2,698
Turkey ..	1926	11,702	Basutoland ..	1927	2,149
Peru ..	1922	11,335	Sudan (Anglo-Egyptian)	1927	2,010
France ..	1928	10,415	Poland ..	1927	1,918
Bulgaria ..	1926	8,739	Tanganyika Territory	1927	1,911
French Morocco ..	1928	8,035			
Brazil ..	1920	7,933			

(a) Including goats.

6. **World's Totals.**—The number of sheep in the various great divisions of the world has been estimated by the International Institute of Agriculture, and a comparison has been made with pre-war estimates. In the table below the results are shown, the totals being subject to the limitations noted for other classes of live stock. (See § 2, 6 *ante*.)

SHEEP.—WORLD'S TOTALS, 1913 AND 1927.

Continents, etc.	Number at the date nearest—		Increase (+) or Decrease (–) in 1927.	
	1913.	1927.	Actual Figures.	Percentages.
	,000	,000	,000	%
Europe (excluding the U.S.S.R.) ..	126,999	129,733	+ 2,734	+ 2.2
United Socialist Soviet Republics ..	111,051	120,237	+ 9,186	+ 8.3
North and Central America ..	43,148	51,097	+ 7,949	+ 18.4
South America ..	100,392	89,642	– 10,750	– 10.7
Asia (excluding the U.S.S.R.) ..	41,802	43,994	+ 2,192	+ 5.2
Africa ..	76,583	84,118	+ 7,535	+ 9.8
Oceania ..	109,331	129,947	+ 20,616	+ 18.9
Total ..	609,306	648,768	+ 39,462	+ 6.5

7. **Oversea Imports and Exports of Sheep.**—As in the case of cattle, the overseas exports of live sheep from Australia are of comparatively small importance. During the past five years the principal consignments of ordinary sheep have been made to Malaya (British) from the State of Western Australia. The purchases by South African and Japanese buyers at the Australian Stud Sheep Sales during recent years have opened up a regular export trade with these two countries in stud sheep, the bulk of which has been secured from the leading flocks of New South Wales, Victoria and South Australia. Other countries purchasing stud sheep during 1928–29 were Russia and Chile. The following are particulars of the imports and exports for the years 1924–25 to 1928–29 :—

SHEEP.—IMPORTS AND EXPORTS, AUSTRALIA, 1924–25 TO 1928–29.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1924–25 ..	2,183	10,902	6,326	40,695	4,143	29,793
1925–26 ..	2,375	13,873	22,706	41,831	20,331	27,958
1926–27 ..	6,951	34,595	33,169	49,985	26,218	15,390
1927–28 ..	3,045	12,417	33,916	52,929	30,871	40,512
1928–29 ..	3,764	17,797	33,309	61,244	29,545	43,447

8. **Sheep Slaughtered.**—The number of sheep slaughtered in the several States during each of the years from 1924 to 1928 was as follows :—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1924 TO 1928.

Year.	N.S.W. (a)	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	Nor. Ter.	Fed. Cap. Ter.(a)	Total.
1924 ..	3,396,957	3,591,219	446,247	933,426	588,577	276,117	..	2,989	9,235,532
1925 ..	4,244,497	4,194,572	635,335	1,028,533	613,935	286,691	..	7,908	11,011,471
1926 ..	5,600,083	4,528,113	679,266	1,090,756	712,647	310,428	..	19,319	12,940,612
1927 ..	5,009,511	4,732,494	669,742	1,209,608	784,349	328,671	..	22,507	12,756,882
1928 ..	4,967,835	5,286,642	805,461	1,263,352	807,510	331,820	..	20,384	13,483,004

(a) Year ended 30th June year following.

9. **Production and Consumption of Mutton and Lamb.**—The annual production of mutton and lamb during the three years ended 1928–29 averaged 520,387,450 lbs., of which 443,871,672 lbs., or 85 per cent., was consumed locally, leaving a balance of 15 per cent. for exportation. The consumption of mutton and lamb in Australia during the same period averaged 71 lbs. per head per annum, a figure considerably in excess of the per capita consumption during the past three years in the following countries :—United Kingdom, 26 lbs. ; Canada, 6 lbs. ; and United States of America, 5½ lbs.

10. **Exports of Mutton and Lamb Preserved by Cold Process.**—The export trade in mutton and lamb preserved by cold process grew rapidly until in 1913, the year immediately before the war, the value of the shipments amounted to nearly £3,000,000. The exports fell away considerably during the war years, but a record shipment of 246,971,346 lbs., valued at £5,482,564, was made in 1919–20, and another large consignment, valued at £4,321,917, was dispatched in 1922–23. Climatic conditions have since favoured a considerable output, but shipments were not large in comparison, owing chiefly to the sound position of wool and depressed meat markets overseas.

The quantity and value of the shipments during each of the past five years were as follows:—1924–25, 50,271,462 lbs., £1,522,082; 1925–26, 85,681,970 lbs., £2,430,465; 1926–27, 93,520,154 lbs., £2,057,607; 1927–28, 46,362,954 lbs., £1,188,506; 1928–29, 84,929,176 lbs., £2,166,043.

As in the case of frozen beef, the principal customer in this trade is the United Kingdom, which absorbed 88 per cent. of the total quantity exported from Australia during the year 1928–29, while the balance was shipped mainly to Canada, Malaya (British), and United States of America.

§ 5. Wool.

1. *General*.—Australia is the leading wool-growing country in the world. With less than one-sixth of the world's sheep Australia produced in 1928–29, 25 per cent., or one-quarter of the world's supply. Her contribution was even more important as it represented one-half of the world's production of fine quality merino wool. The bulk of the production is exported, but with the greater activity of Australian woollen mills the quantity used locally is increasing, nevertheless the amount so used represents under 6 per cent. of the total production.

2. *Value*.—Wool is the chief factor in the pastoral wealth of Australia and the nation's prosperity is largely dependent upon the satisfactory sale of its annual wool clip. Based upon the export values of the produce of the various States the output for the season 1928–29 was valued at £70,833,000 compared with £75,364,000 in the previous year, £81,430,000 in the record price year 1924–25, and £71,792,000 the average of the previous five seasons. During the period 1924–25 to 1928–29 the export of wool averaged 42.2 per cent. of the value of the total shipments of merchandise from Australia, and during 1928–29 the ratio was 42.5 per cent.

3. *Greasy and Scoured Wool*.—For the purpose of comparing the clips as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The quantity of Australian greasy wool which was scoured and washed before export during the last five years has been on the average about 17 per cent. of the total export in terms of greasy wool. The loss of weight in scouring varies largely with season, locality, breed, and condition. It seems preferable to express "scoured and washed" wool in terms of "greasy" rather than vice versa, since the absolute error arising from uncertainty as to average loss of weight is thereby minimized.

In the tables dealing with production, "scoured and washed" wool has been converted into the estimated equivalent amount of "greasy" on the assumption that two and one-sixth pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed."

4. *Production*.—(i) *Quantity*. The annual shearing of the live sheep provides the main source of Australia's wool supply, the resultant clip forming about 89 per cent. of the total production. A small quantity, approximately $6\frac{1}{2}$ per cent. of the total output is obtained by fellmongering, or removing wool from skins of slaughtered sheep, while the remaining $4\frac{1}{2}$ per cent. is an estimation of the quantity of wool exported on sheepskins. Statistics of wool production are compiled from data received from growers, fellmongers, etc. As the result of recent investigations made in some of the States serious understatements by landholders have been disclosed, and exhaustive inquiries have enabled the Statisticians of the States concerned satisfactorily to revise their original figures, and provisional amendments have been inserted pending similar action in the remaining States. The following table furnishes the revised figures for each State and the Commonwealth during the past five seasons:—

WOOL.—TOTAL PRODUCTION, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales(a) ..	369,118,000	402,490,000	499,322,000	443,860,000	484,753,597
Victoria ..	133,484,871	139,076,017	151,624,526	148,503,795	179,854,306
Queensland ..	152,131,544	158,744,544	129,435,804	136,544,333	150,108,044
South Australia ..	62,438,953	69,007,266	72,365,200	78,369,918	74,616,004
Western Australia ..	47,204,687	51,827,080	59,300,023	67,549,734	63,890,984
Tasmania ..	12,483,452	12,564,000	12,333,000	13,272,000	14,900,000
Northern Territory(b)	20,000	30,000	30,000	30,000	30,000
Total ..	776,881,507	833,738,907	924,410,553	888,129,780	968,152,935

(a) Including Federal Capital Territory.

(b) Approximate figures.

(ii) *Estimate for 1929-30.* Although the returns are not yet complete, the total wool production of the Commonwealth during 1929-30 is officially estimated at 910,000,000 lbs., valued at approximately £42,863,000.

5. *Care Needed in Comparing Clips.*—In comparing successive clips, allowance must be made for the circumstance that, owing to climatic or other conditions, the time of shearing may be so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth.

6. *World's Wool Production.*—The following table compiled by the Textile Division of the United States Department of Commerce shows the importance of Australia as a wool-producing country. Out of a total production of 3,663 million lbs. in 1929, Australia's contribution amounted to over 888 million lbs., or more than 26 per cent. of the world's supply.

WOOL(a).—WORLD'S PRODUCTION, 1909 TO 1929.

Countries.	Average Annual Pre-War Production.(b)	Production.	
		1928.	1929.(c)
North America—	lbs.	lbs.	lbs.
United States	314,110,000	351,013,000	363,447,000
Canada	11,210,000	19,611,000	21,420,000
Mexico	7,000,000	1,320,000	1,320,000
Total	332,320,000	371,944,000	386,187,000
Central America and West Indies	1,000,000	..	..
South America—			
Argentine Republic ..	358,688,000	342,250,000	323,400,000
Brazil	35,000,000	24,200,000	24,200,000
Chile	17,430,000	33,000,000	32,500,000
Peru	9,940,000	10,000,000	10,300,000
Uruguay	156,968,000	135,000,000	135,000,000
All other	9,324,000	17,147,000	19,847,000
Total	587,350,000	561,597,000	545,247,000

(a) Computed on "greasy" basis. (b) Average for years 1909 to 1913 inclusive. (c) Where 1929 figures were not obtainable, an earlier figure or an unofficial estimate has been inserted.

WOOL(a).—WORLD'S PRODUCTION 1909 TO 1929—*continued*.

Countries.	Average Annual Pre-War Production.(b)	Production.	
		1928.	1929.(c)
	lbs.	lbs.	lbs.
Europe—			
Austria	15,360,000	837,000	860,000
Belgium	1,060,000	800,000	775,000
Bulgaria	23,700,000	21,495,000	22,887,000
Czecho-Slovakia		3,290,000	3,290,000
Denmark	3,508,000	992,000	2,959,000
Estonia		1,850,000	1,499,000
Finland		4,980,000	4,250,000
France	80,688,000	49,604,000	44,000,000
Germany	52,000,000	31,905,000	34,750,000
Greece	14,000,000	16,625,000	16,625,000
Hungary	17,637,000	11,500,000	6,150,000
Iceland	1,980,000	1,642,000	(d)
Italy	55,000,000	49,500,000	37,500,000
Jugo-Slavia	25,446,000	30,000,000	30,000,000
Netherlands	3,556,000	3,960,000	4,400,000
Norway	8,160,000	5,515,000	5,515,000
Poland	7,100,000	9,839,000	8,818,000
Portugal	10,000,000	6,325,000	5,105,000
Rumania	13,228,000	55,000,000	55,000,000
Russia	320,000,000	370,272,000	384,252,000
Spain	72,000,000	100,000,000	99,000,000
Sweden	2,875,000	1,600,000	1,250,000
Switzerland	1,049,000	850,000	850,000
Turkey	28,000,000		
United Kingdom	134,000,000	106,112,000	117,869,000
Irish Free State		13,578,000	14,461,000
All other		7,327,000	9,886,000
Total	890,347,000	905,398,000	911,951,000
Asia—			
British India	60,000,000	70,000,000	70,000,000
China	50,000,000	55,505,000	55,505,000
Persia	12,146,000	14,000,000	45,000,000
Russia in Asia	60,000,000	(e)	(e)
Turkey in Asia	90,000,000	11,000,000	7,700,000
All other	1,000,000	56,622,000	51,594,000
Total	273,146,000	207,127,000	229,799,000
Africa—			
Algeria	35,221,000	38,764,000	43,000,000
British South Africa	165,888,000	285,000,000	311,967,000
Tunis	3,735,000	3,164,000	3,801,000
Morocco	14,850,000	21,627,000	21,657,000
All other	30,000,000	18,374,000	19,538,000
Total	249,694,000	366,929,000	399,963,000
Oceania—			
Australia	741,377,000	888,130,000	968,153,000
New Zealand	198,474,000	235,546,000	222,491,000
Total	939,851,000	1,123,676,000	1,190,644,000
Total all other Countries	13,000,000	..	..
GRAND TOTAL	3,286,708,000	3,536,671,000	3,663,791,000

(a) Computed on "greasy" basis. (b) Average for years 1909 to 1913 inclusive. (c) Where 1929 figures were not obtainable, an earlier figure or an unofficial estimate has been inserted. (d) Included with Denmark. (e) Included with Russia in Europe.

7. **Wool Locally Used.**—The quantity of wool used in the woollen and tweed mills of the various States during the past five years was approximately as follows; the total shown for 1928-29 includes 312,480 lbs. as in the grease of wool used in the manufacture of hats :—

**WOOL.—GREASY, USED IN LOCAL WOOLLEN, TWEED, AND TOP MILLS,
1924-25 TO 1928-29.**

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	12,798,722	15,332,166	15,394,828	12,033,830	14,796,906
Victoria	14,420,497	17,642,326	29,020,842	24,075,102	23,372,872
Queensland	1,102,110	2,192,482	3,373,800	3,589,730	3,116,009
South Australia	536,870				
Western Australia .. ..	..			
Tasmania	1,931,814				
Total	30,790,013	38,488,187	52,127,351	44,104,360	47,148,649

The total consumption of wool in Australia cannot be accurately estimated, as particulars in respect of all wool-using establishments are not available. The figures given above, however, are furnished by the largest consumers, and approximate the total quantity used in local manufacture.

8. **Exports of Wool.**—(i) *Greasy—Quantities.* Of the total weight of wool expressed in terms of “greasy” shipped overseas during the past five years slightly more than 33.7 per cent. was sent to the United Kingdom, practically the same percentage as was dispatched in pre-war years. The other leading consignees since 1924-25 were France, Japan, Germany, Belgium, United States of America, and Italy, the principal continental countries taking 48.7 per cent., and America and Japan 16.2 per cent. of the total shipments. The following table shows for the years 1924-25 to 1928-29 the quantities of “greasy” wool exported, and the principal countries of destination :—

WOOL IN THE GREASE.—EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Country to which Exported.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	175,937,327	256,078,293	211,874,803	196,106,241	212,035,141	1,052,031,805
France	114,676,170	224,052,949	174,426,470	140,913,531	172,006,450	826,075,570
Japan	53,015,265	59,595,292	78,913,977	106,399,417	101,092,258	399,016,209
Germany	39,595,031	65,802,691	97,808,703	95,402,154	99,933,251	398,541,830
Belgium	36,682,734	64,602,486	76,891,243	76,032,767	99,695,826	353,905,056
United States of America	38,501,358	61,317,978	41,446,243	27,089,377	19,154,235	187,509,191
Italy	28,752,441	34,173,784	28,185,823	34,691,092	40,104,242	165,907,382
Netherlands	2,977,389	1,472,172	1,090,882	100,604	296,051	5,937,098
India	770,543	193,292	448,275	778,328	1,404,596	3,595,034
Canada	483,127	461,719	338,045	177,208	270,921	1,731,020
Other Countries	875,712	1,353,614	925,744	11,157,264	17,346,556	31,658,890
Total	492,267,097	769,104,270	712,350,208	688,847,983	763,339,527	3,425,909,085

(ii) *Scoured and Washed—Quantities.* Similar particulars concerning the exports of “scoured and washed” wool were as follows :—

WOOL, SCOURED AND WASHED(a).—EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Country to which Exported.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	27,181,826	32,481,422	30,113,626	19,242,933	24,818,010	133,837,817
France ..	5,609,547	9,452,561	10,078,990	9,193,140	5,463,934	39,798,172
Japan ..	3,462,119	6,484,570	5,002,337	3,179,822	1,972,525	20,101,373
Belgium ..	3,179,143	3,295,602	5,739,697	6,266,951	6,987,612	25,468,985
Germany ..	1,979,909	1,780,997	5,344,667	7,004,132	3,534,812	19,644,517
United States of America	713,661	1,087,828	305,374	796,867	875,775	3,778,505
Canada ..	441,424	506,608	320,900	288,396	614,677	2,172,005
Italy ..	413,878	308,316	294,957	395,277	544,585	1,957,013
Netherlands ..	18,995	28,470	..	23,653	12,718	83,836
India ..	212,006	8,395	1,816	17,310	174,272	413,799
Other Countries ..	448,554	601,259	534,329	7,454,477	2,202,143	11,240,762
Total ..	43,661,062	56,036,028	57,736,693	53,862,938	47,201,063	258,497,784

(a) Including "tops."

The figures for "scoured and washed wool" include tops, amounting in 1924-25 to 4,090,958 lbs., valued at £1,119,849; in 1925-26, 5,953,442 lbs., valued at £1,162,877; in 1926-27, 4,519,357 lbs., valued at £822,713; in 1927-28, 2,559,159 lbs., valued at £488,199; and in 1928-29, 872,774 lbs., valued at £166,957. The total exports of wool tops during the last five years amounted to 17,995,690 lbs., valued at £3,760,595, of which 15,603,165 lbs., or more than 85 per cent., were shipped to Japan.

(iii) *Total Value of Exports.* The total value of the wool exported from Australia to the principal countries during the five years under review was :—

WOOL EXPORTS.—TOTAL VALUE, AUSTRALIA, 1924-25 TO 1928-29.

Country to which Exported.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	24,386,464	23,195,387	19,013,978	19,993,795	19,947,694	106,537,318
France ..	12,484,097	15,821,883	13,164,721	11,960,477	11,865,744	65,296,922
Japan ..	7,479,586	5,869,969	7,868,883	10,316,846	8,693,195	40,228,479
United States of America	5,926,430	6,076,012	4,080,960	3,105,212	1,883,155	21,071,769
Germany ..	4,929,589	5,034,599	7,920,677	9,080,643	7,773,780	34,739,288
Belgium ..	3,844,335	4,221,646	5,507,034	6,186,070	6,434,323	26,193,408
Italy ..	3,327,166	2,523,541	2,156,454	2,944,103	3,019,802	13,971,066
Netherlands ..	367,651	117,408	89,078	13,527	27,411	615,075
Canada ..	162,395	121,359	69,695	79,137	113,926	546,512
India ..	108,522	14,897	28,670	53,026	110,802	310,917
Other Countries ..	246,910	213,175	159,210	2,364,282	1,745,413	4,728,990
Total ..	63,263,145	63,209,876	60,054,360	66,097,118	61,615,245	314,239,744

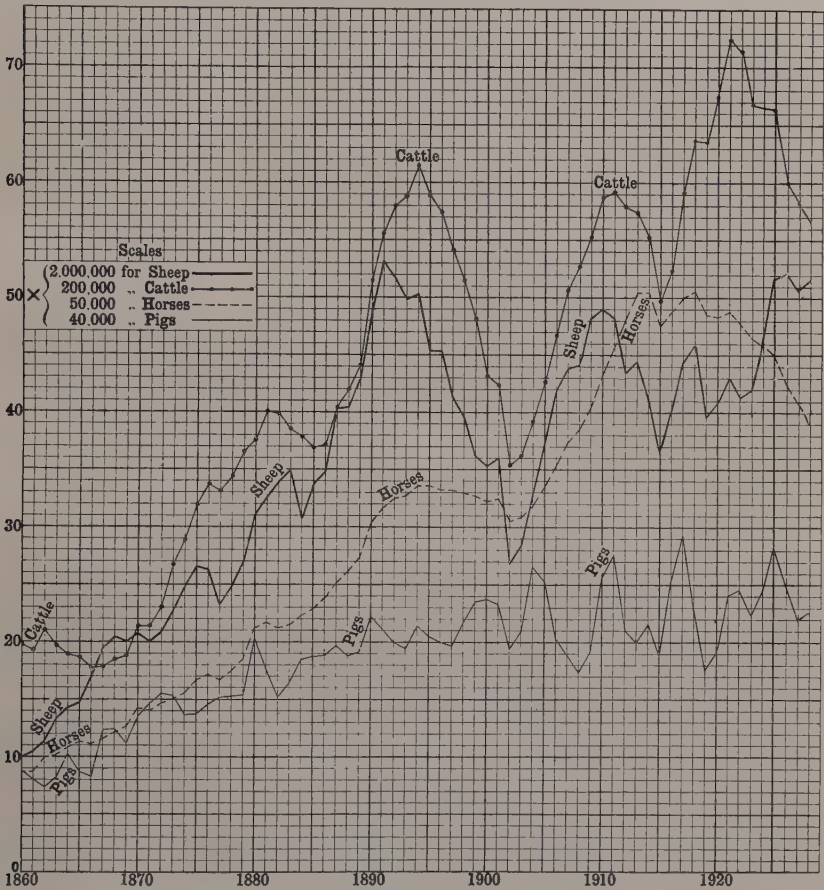
9. *Average Export Value.*—The average values per pound of Australian wool according to the export returns for the year 1913 and for each of the past five years have been as follows :—

AUSTRALIAN WOOL.—EXPORT VALUE PER POUND, 1913 TO 1929-30.

Description.	1913.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
	d.	d.	d.	d.	d.	d.
Greasy ..	9.70	17.63	17.99	20.49	17.58	11.30
Scoured ..	17.27	26.57	26.25	31.87	28.72	19.34

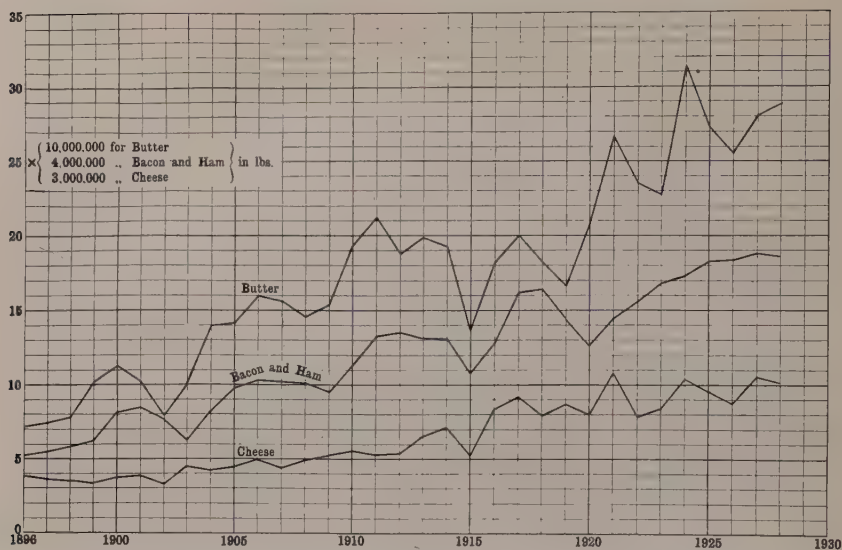
10. *Exports and Local Sales of Wool.*—Wool selling in Australia has been developed to such a stage that approximately 90 per cent. of the wool grown is now disposed of locally prior to export. Buyers from the United Kingdom, France, Belgium, Germany, and other European countries, also from America, Japan, China, and India, attend the sales conducted in Sydney, Albury, Melbourne, Geelong, Ballarat, Brisbane, Adelaide, Perth, Hobart, and Launceston. Particulars regarding exports and local sales, as well

NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS—AUSTRALIA, 1860 TO 1928.



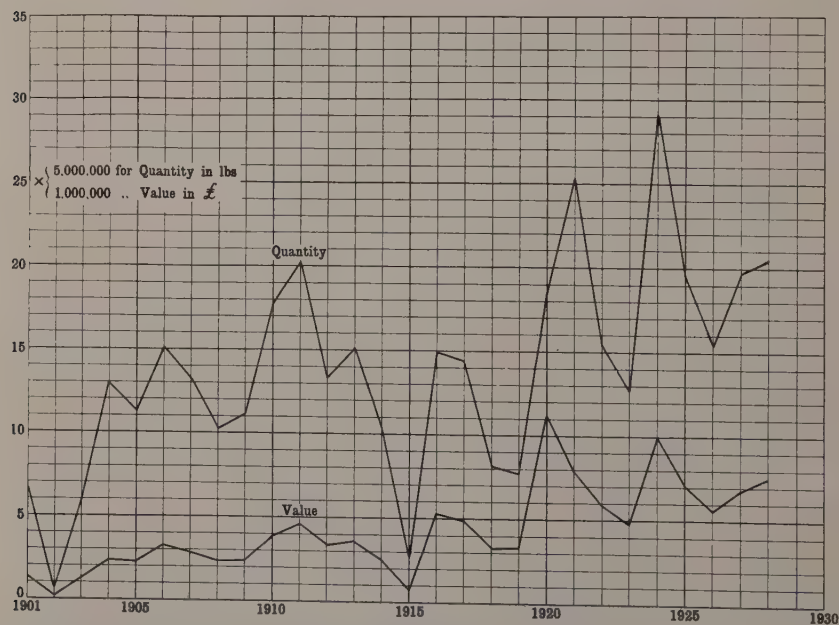
EXPLANATION.—The base of each small square represents an interval of one year, and the vertical side 2,000,000 in the case of sheep, 2,000,000 for cattle, 50,000 for horses, and 40,000 for pigs.

PRODUCTION OF BUTTER, CHEESE, AND BACON AND HAM—AUSTRALIA
1896 TO 1928.



EXPLANATION.—The base of each small rectangle represents an interval of one year, and the vertical height of each denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham 4,000,000 lbs.; and in the case of cheese 3,000,000 lbs.

QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM AUSTRALIA, 1901 TO 1928.



EXPLANATION.—The base of each small rectangle represents an interval of one year, and the vertical height of each 5,000,000 lbs. in weight, or £1,000,000 in value.

as quantities and ratios of the various descriptions of wool marketed in each State, were inserted in preceding issues of the Official Year Book, but considerations of space preclude the inclusion of similar matter in the present volume. Detailed tables, however, are published in Production Bulletin No. 23 issued by this Bureau.

11. The Wool Market.—(i) *The 1928-29 Season.* The 1928-29 wool-selling season was very disappointing when compared with the previous season, which was one of the most successful experienced in the history of the industry. The sustained demand which characterized the 1927-28 season was absent in 1928-29 and the markets reflected a lack of confidence. Prices, however, remained steady at the opening rates but waned considerably towards the close of the year. Although the clip exceeded that of the preceding year by almost 80 million lbs., and constituted a record, its total value, based upon export price, was £4.8 million less. The clip for 1928-29 was well grown, but largely lacked the fineness of the preceding year, being generally broader in staple, due to the generous conditions under which it was grown.

During the year the sales figures amounted to 2,645,695 bales, compared with 2,411,873 bales the previous year. Values depreciated considerably during the season, the average bale realizing £3 12s. 11d. less than the previous year, while the aggregate sales amounted to £57,122,056 as against £60,873,662 in 1927-28.

(ii) *Wool Realization Scheme.* The British Australian Wool Realization Association Ltd. ("B.A.W.R.A.") was formed on the 27th January, 1921, for the purpose of realizing the large stock of wool remaining at the close of the Imperial Wool Purchase Scheme, which covered part of the 1916-17 clip and the complete clips of the three following seasons. Detailed information in connexion with procedure is contained in the previous Official Year Books (see No. 22, p. 666). The whole of the wool controlled by "B.A.W.R.A." was sold in three and a half years, and passed into consumption together with the current clips of the wool-growing countries.

The following statement provides a summary of the payments made to wool-growers under the Imperial Wool Purchase Scheme and of the distribution of profits accruing to growers therefrom to 31st December, 1929 :—

**STATEMENT OF AMOUNTS DISTRIBUTED BY CENTRAL WOOL COMMITTEE
AND "B.A.W.R.A." TO 31st DECEMBER, 1929.**

1916—November	..	Initiation of Imperial Wool Purchase Scheme.	
1917—January 3rd	..	First appraisalment of wool.	
1920—June 30th	..	Last appraisalment of wool.	
		Total f.o.b. value of wool and sheepskins	£171,518,891
1920—October 27th	..	Payment by Central Wool Committee of 5 per cent. profits dividend	£7,333,700
1921—January	..	Formation of "B.A.W.R.A." Limited—	
		Issue of Priority Wool Certificates and Share Certificates.	
1921—July 30th	..	Payment—47½ per cent.—	
		Priority Wool Certificates	£4,487,899
		Cash retirement of small interests and fractional payments	£206,536
1922—May 18th	..	Payment—52½ per cent.—	
		Final payment of Priority Wool Certificates	£4,960,310
1923—April 14th	..	First capital reduction—	
		Payment 10s. per share	£5,651,495
1923—May 1st	..	Last bale of wool shipped from Australia.	
1924—February 12th	..	Second capital reduction—	
		Payment 9s. per share	£5,086,345
1924—May 2nd	..	Last bale of wool sold in England.	
1927—November 15th	..	Final capital payment—	
		1s. per share	£565,149
			£20,957,734
			£199,810,325
1927—November 15th	..	First liquidation payment—	
		12s. 6d. per share	7,064,368
			£206,874,693

12. United Kingdom Importation of Wool.—The appended statement of the quantity and value of wool imported into the United Kingdom during the year 1928 from the principal wool-producing countries shows the important position which Australia occupies in the supply of wool to the mother country :—

WOOL(a).—IMPORTS, UNITED KINGDOM, 1928.

Country from which imported.	Quantity.	Value.	Country from which imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ..	222,567,800	20,090,249	United States of America ..	1,130,200	93,241
New Zealand ..	182,346,700	12,491,453	Peru ..	3,284,600	262,135
Union of South Africa ..	162,355,600	12,689,256	Belgium ..	3,306,400	305,731
Argentine Republic ..	49,376,000	3,621,391	Falkland Islands	3,074,200	212,150
India ..	55,042,600	2,925,901	Other British Possessions ..	2,123,300	151,491
Chile ..	25,310,400	1,724,210	Germany ..	3,249,600	219,943
France ..	21,734,400	2,377,943	Other Countries	11,131,900	678,051
Uruguay ..	27,289,200	2,333,325			
Irish Free State	10,035,300	657,348			
			Total ..	783,358,200	60,833,818

(a) Greasy, Scoured, and Tops.

Of the importations of wool into the United Kingdom, Australian wool represented 28 per cent. of quantity and 33 per cent. of value, and New Zealand 23 per cent. of quantity and 21 per cent. of value. It is interesting to note that 637,545,500 lbs., valued at £49,217,848, were received from British Possessions, being 81 per cent. of the total weight and 81 per cent. of the total value imported.

§ 6. Trade in Hides and Skins.

1. Extent of Trade.—In addition to the hides and skins treated in the tanneries of the several States, a very considerable export trade is carried on, the value of Australian cattle and horse hides and sheep and other skins exported during the five years 1924–25 to 1928–29 amounting to £44,200,027, or an average of £8,840,005 per annum.

2. Sheepskins with Wool.—By far the largest item included in the amount mentioned in the preceding sub-section arises from the value of sheepskins with wool—the exports of which during the five years aggregated £19,696,527. France was the largest purchaser, taking 52.3 per cent. of the total consignments, while United Kingdom ranked next with 31.6 per cent., and the remaining 16 per cent. was shipped principally to the United States of America, Belgium, and Germany. The exports of sheepskins with wool during each of the years from 1924–25 to 1928–29 were as follows :—

SHEEPSKINS WITH WOOL.—EXPORTS, AUSTRALIA, 1924–25 TO 1928–29.

Particulars.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.	Total for 5 years.
Sheepskins (with wool) .. No.	6,245,268	8,585,054	9,152,287	10,829,913	10,910,516	45,723,038
Value .. £	3,821,837	3,509,328	3,409,833	4,410,702	4,544,827	19,696,527

3. **Sheepskins without Wool.**—In the case of sheepskins without wool the principal countries of consignment are the United States of America and the United Kingdom. These two countries were responsible for 96 per cent. of the exports during the past five years, the purchases of the United States of America alone amounting to 68 per cent. of the total shipments. Particulars concerning exports are as follows :—

SHEEPSKINS WITHOUT WOOL.—EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Total for 5 years.
Sheepskins (with- out wool) .. No.	64,425	89,860	217,102	553,170	514,302	1,438,859
Value £	7,139	13,858	30,228	42,447	44,001	137,673

4. **Hides.**—(i) *Exports.* The export trade in Australian cattle hides, which fell away during the war years, has again become important. Considerable quantities were shipped oversea during each of the last five years mainly to Italy, which took 21 per cent. of the total shipments during that period, followed by the United Kingdom 20 per cent., United States of America 18 per cent., Germany 17 per cent., and Finland 6 per cent.

Particulars concerning the export of cattle hides during the past five years are as follows :—

CATTLE HIDES.—EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Total for 5 years.
Cattle Hides .. No.	1,167,938	916,956	889,746	1,003,220	829,780	4,807,640
Value £	1,322,088	1,105,540	998,981	1,690,908	1,331,486	6,449,003

Calfskins exported during the years 1924-25 to 1928-29 numbered 1,331,750, valued at £413,313, and were shipped mainly to the United States of America, the value of the skins taken by that country averaging 53 per cent. of the total exports during the past five years. The annual export of horse hides is very small, and averaged only 6,091 hides, valued at £4,819.

(ii) *Imports.* The import trade in cattle hides and calfskins is fairly considerable, the number annually imported on the average during the past five years amounting to 398,820, with an average value of £476,852. New Zealand supplies the great bulk of these importations, and shipments of limited quantities are also obtained from the Pacific Islands, France, and Italy. The number and value of cattle hides, including calfskins, imported into Australia during the five years 1924-25 to 1928-29 were as follows :—

CATTLE HIDES.—IMPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Total for 5 years.
Cattle Hides .. No.	456,589	474,342	371,868	327,903	363,400	1,994,102
Value £	494,501	462,066	437,932	419,345	570,416	2,384,260

The number of horse hides imported into Australia is unimportant. Imports during the last five years averaged 1,027, valued at £973 per annum.

5. **Other Skins.**—The oversea exports of skins other than those mentioned in the preceding sub-sections are of considerable importance. During the past five years the value of these shipments amounted to £17,479,417, or an annual average of £3,495,883. Rabbit and hare skins contributed most largely to this total, followed by opossum and kangaroo skins. The individual exports from 1924-25 to 1928-29 were as follows:—

OTHER SKINS.—EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Total for 5 years.
	£	£	£	£	£	£
Rabbit and Hare	2,492,438	2,880,360	2,837,663	2,492,522	2,630,295	13,333,278
Opossum ..	127,774	362,406	921,833	540,735	166,059	2,118,807
Kangaroo ..	182,009	154,476	137,994	200,781	207,532	882,792
Fox ..	62,988	112,986	103,683	140,301	132,771	552,729
Wallaby ..	55,653	74,464	46,655	42,184	87,299	306,255
Other ..	10,912	13,320	26,400	214,085	20,839	285,556
Total ..	2,931,774	3,598,012	4,074,228	3,630,608	3,244,795	17,479,417

The destination of these skins was practically confined to the United States of America and the United Kingdom, the former country taking the bulk of the rabbit, hare, and kangaroo skins, while the fox, opossum, and wallaby skins were mainly dispatched to the United Kingdom. The shipments of the various skins to these two countries during the past five years were as follows:—

**OTHER SKINS.—EXPORTS TO UNITED STATES AND UNITED KINGDOM,
1924-25 TO 1928-29.**

Particulars.	United Kingdom.	United States of America.
	£	£
Rabbit and Hare	4,041,862	8,291,767
Opossum	1,237,213	934,391
Kangaroo	155,258	717,568
Fox	445,260	60,771
Wallaby	264,723	33,502
Other	55,566	200,037
Total	6,199,882	10,238,036

CHAPTER XVII.

AGRICULTURAL PRODUCTION.

NOTE.—Except where otherwise stated, the “agricultural” years hereafter mentioned are taken as ending on 30th June.

§ 1. Introductory.

Preceding issues of the Official Year Book contain a brief reference to the attempts at cultivation by the first settlers in New South Wales, and to the discovery of suitable agricultural land on the Parramatta and Hawkesbury Rivers prior to the year 1813, and west of the Blue Mountains thereafter. (See No. 22, p. 670.)

§ 2. Progress of Agriculture.

1. **Early Records.**—In an “Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797,” Governor Hunter gives the acreage under crop as follows:—Wheat, 3,361 acres; maize, 1,527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6,874 acres; maize, 3,389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 37 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. **Progress of Cultivation.**—(i) *General.* The following table shows the area under crop in each of the States and Territories of Australia at decennial intervals since 1860 and during each of the last five seasons:—

AREA UNDER CROP, 1860 TO 1928–29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860–1	246,143	387,283	3,353	359,284	24,705	152,860	..	..	1,173,628
1870–1	385,151	692,840	52,210	801,571	54,527	157,410	..	..	2,143,709
1880–1	606,277	1,548,809	113,978	2,087,237	63,902	140,788	..	..	4,660,991
1890–1	852,704	2,031,955	224,993	2,093,515	69,678	157,376	..	..	5,430,221
1900–1	2,446,767	3,114,132	457,397	2,369,680	201,338	224,352	..	..	8,813,666
1910–11	3,386,017	3,952,070	667,113	2,746,334	855,024	286,920	360	..	11,893,838
1920–21	4,465,143	4,489,503	779,497	3,231,083	1,804,987	297,383	296	1,960	15,069,858
1924–25	4,912,124	4,761,394	1,069,837	3,557,405	2,710,856	263,872	342	2,361	17,278,191
1925–26	4,541,360	4,433,492	1,033,765	3,583,867	2,932,110	266,412	391	2,181	16,793,578
1926–27	4,593,847	4,735,173	941,783	3,883,920	3,324,523	289,364	440	3,449	17,772,499
1927–28	4,998,272	4,942,258	1,066,613	4,192,167	3,720,100	296,875	570	2,539	19,219,394
1928–29	5,442,982	5,505,651	1,044,632	4,660,003	4,259,269	273,152	392	3,476	21,189,557

The progress of agriculture was uninterrupted from 1860 until 1915–16, when, as the result of a special war effort, Australia cultivated 18,528,234 acres. Following that year, the decline in wheat-growing and the effects of the drought of 1918–19 reduced the acreage to 13,296,407 acres in 1919–20, a decrease of 5,231,827 acres in the space of four years. With the removal of the obstacles to the disposal of the wheat crop, the area began to expand in 1920–21, and despite occasional adverse seasons, the area planted in 1928–29 amounted to more than 21 million acres. This area is the largest yet cultivated and exceeds the previous record of 1927–28 by 1,970,163 acres. Wheat continues to be the most extensively-grown crop in Australia, the area thereunder for both grain and hay during 1928–29 amounting to almost 75 per cent. of the total acreage under cultivation. The extension of the wheat area since 1919–20, despite intermittent adverse climatic and market conditions, is a happy augury for the continuance of agricultural development in Australia.

(ii) *Relation to Population.* The total area under cultivation per head of population reached its lowest point in recent years during 1919–20, but since that year the position has considerably improved. The rate of progress during the past decennium has more than kept pace with the gain in population. Details for the past five seasons are as follows :—

AREA UNDER CROP PER 1,000 OF POPULATION, 1924–25 TO 1928–29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924–25 ..	2,179	2,873	1,281	6,606	7,444	1,211	95	788	2,942
1925–26 ..	1,976	2,633	1,200	6,497	7,878	1,228	107	553	2,803
1926–27 ..	1,957	2,766	1,068	6,857	8,777	1,347	113	701	2,908
1927–28 ..	2,082	2,838	1,186	7,281	9,483	1,375	131	443	3,083
1928–29 ..	2,226	3,126	1,140	8,044	10,494	1,261	98	430	3,344

(iii) *Relation to Total Area.* The next table furnishes a comparison of the area under crop in the several States and Territories and Australia with the respective total areas. For Australia as a whole, the area under crop in 1928–29 represented only about 1 acre in every 90. In Victoria the proportion was about 1 acre in every 10, in New South Wales 1 in 36, in South Australia 1 in 52, in Tasmania 1 in 61, in Western Australia 1 in 147, in Queensland 1 in 411, and in the Federal Territory 1 in 173.

PERCENTAGE OF AREA UNDER CROP ON TOTAL AREA, 1924–25 TO 1928–29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	%	%	%	%	%	%	%	%	%
1924–25 ..	2.480	8.465	0.249	1.462	0.434	1.573	..	0.392	0.908
1925–26 ..	2.293	7.882	0.241	1.473	0.469	1.587	..	0.362	0.882
1926–27 ..	2.320	8.418	0.219	1.597	0.532	1.725	..	0.573	0.934
1927–28 ..	2.524	8.787	0.249	1.723	0.596	1.769	..	0.422	1.009
1928–29 ..	2.748	9.789	0.243	1.916	0.682	1.628	..	0.578	1.113

In the Northern Territory the proportion which the area under crop bears to the total area is, at present, practically negligible.

3. *Artificially-sown Grasses.*—In all the States there are considerable areas under artificially-sown grasses mainly sown on uncultivated land after burning off the existing vegetation, and not included in “area under crops.” Statistics regarding the areas under such grasses are as shown hereunder :—

AREA UNDER SOWN GRASSES, 1924-25 TO 1928-29.

Season.	New South Wales.	Victoria.	Queens-land.	South Australia.	Western Australia.	Tasmania	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25	1,993,694	944,339	538,165	64,212	60,257	866,331	500	24	4,467,522
1925-26	2,017,831	933,271	532,052	60,453	89,170	821,807	500	13	4,455,102
1926-27	2,036,873	952,239	543,528	74,484	123,751	791,210	500	13	4,527,603
1927-28	2,180,852	387,052	546,575	76,912	169,105	782,136	500	18	4,643,150
1928-29	2,201,091	1,154,718	587,434	78,686	243,560	766,741	500	552	5,033,282

The increase in the area of the grass lands of Australia during recent years is due in large measure to the development of the dairying industry referred to in the next chapter.

§ 3. Relative Importance of Crops.

1. Distribution of Crops.—The following table gives the areas in the several States under each of the principal crops for the season 1928-29 :—

DISTRIBUTION OF CROPS, 1928-29.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Aus-tralia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ..	4,090,083	3,718,904	218,069	3,445,563	3,343,530	22,570	..	1,394	14,840,113
Oats ..	126,743	347,021	916	207,266	325,827	37,602	..	295	1,045,670
Maize ..	106,835	16,077	192,173	..	55	..	..	..	315,140
Barley—									
Malting ..	2,612	49,345	5,188	234,958	10,889	4,162	..	..	307,154
Other ..	2,412	26,106	2,466	12,390	3,540	451	..	20	47,385
Beans and Peas ..	31	8,038	40	14,244	2,141	23,740	..	..	48,234
Rye ..	3,005	711	70	688	355	..	..	70	4,899
Other Cereals ..	14,027	..	3	..	84	..	20	..	14,134
Hay ..	684,730	1,005,063	55,498	497,538	414,866	80,190	..	788	2,738,673
Green Forage ..	264,699	107,351	180,524	155,460	125,311	25,402	..	837	859,584
Grass and other Seeds ..	..	1,856	1,647	1,300	..	310	..	..	5,113
Orchards and other Fruit Gardens ..	76,009	79,322	38,452	30,836	18,735	34,087	..	85	277,476
Vines—									
Productive ..	13,073	38,689	1,627	48,209	4,571	..	..	..	106,174
Unproductive ..	2,122	2,876	160	3,593	372	..	..	..	9,123
Market Gardens ..	7,709	18,630	918	1,408	2,924	546	..	11	32,146
Sugar Cane—									
Productive ..	6,793	..	215,674	..	..	..	..	..	222,457
Unproductive ..	9,055	..	67,802	..	..	..	..	..	76,857
Potatoes ..	14,830	68,412	8,154	4,518	4,819	37,299	20	16	138,068
Onions ..	131	7,673	277	406	62	..	..	1	8,550
Other Root Crops ..	1,660	2,802	2,610	562	86	4,956	..	3	12,679
Tobacco ..	762	1,317	138	14	7	..	..	..	2,238
Broom Millet ..	2,018	1,337	307	..	..	..	2	..	3,664
Pumpkins and Melons ..	2,345	1,204	8,746	338	484	..	..	4	13,121
Hops ..	..	281	..	1	..	1,203	..	..	1,485
Cotton—									
Productive ..	..	..	20,316	..	..	..	..	..	20,316
Unproductive ..	..	..	5,806	..	..	..	..	..	5,806
All other Crops ..	11,303	2,636	17,051	711	611	634	350	2	33,298
Total Area ..	5,442,982	5,505,651	1,044,632	4,660,003	4,259,269	273,152	392	3,476	21,189,557

2. Relative Areas of Crops in States and Territories.—Taking the principal crops, i.e., those in the case of which the cultivation in Australia amounts to more than 100,000 acres, the proportion of each in the various States and Territories on the total area under crop for the season 1928-29 is shown in the next table. In four of the States, viz., New South Wales, Victoria, South Australia, and Western Australia, wheat-growing for grain is by far the most extensive form of cultivation, whilst hay is second in importance.

In Victoria and Western Australia the oat crop occupies third position, while green forage ranks third in New South Wales, and barley in South Australia. In Queensland the principal crops in the order of importance are sugar cane, wheat, maize, and green forage, while in Tasmania, hay, oats, potatoes, and orchards and fruit gardens occupy the leading positions.

As pointed out previously, wheat is the main crop in Australia, the area thereunder for grain and hay representing in 1928-29 nearly 75 per cent. of the total area under cultivation.

RELATIVE AREAS UNDER CROP, 1928-29.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia
	%	%	%	%	%	%	%	%	%
Wheat ..	75.14	67.55	20.88	73.94	78.50	8.26	..	40.10	70.04
Hay ..	12.58	18.26	5.31	10.68	9.74	29.36	..	22.67	12.92
Oats ..	2.32	6.30	0.08	4.45	7.65	13.77	..	8.49	4.93
Green Forage ..	4.86	1.95	17.28	3.34	2.94	9.30	..	24.08	4.06
Maize ..	1.96	0.29	18.40	..	0.00	..	..	..	1.49
Barley ..	0.09	1.37	0.73	5.31	0.34	1.69	..	0.60	1.67
Orchards and Fruit Gardens	1.39	1.44	3.68	0.66	0.44	12.48	..	1.00	1.31
Sugar-cane	0.29	..	27.13	..	..	..	..	..	1.41
Potatoes ..	0.29	1.24	0.96	0.10	0.11	13.66	5.10	0.46	0.66
Vineyards	0.28	0.75	0.17	1.11	0.12	..	..	..	0.54
All other ..	0.80	0.85	5.38	0.41	0.16	11.48	94.90	2.60	0.97
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. Area of Chief Crops, Australia, 1924-25 to 1928-29.—The acreage under each of the principal crops in Australia during the last five seasons is shown below :—

AREA OF CHIEF CROPS.—AUSTRALIA, 1924-25 TO 1928-29.

Crop.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ..	10,824,966	10,201,276	11,687,919	12,279,088	14,840,113
Hay ..	3,026,405	2,832,003	2,699,631	2,632,219	2,738,673
Oats ..	1,165,127	1,013,233	844,114	1,122,303	1,045,670
Green Forage ..	564,924	1,055,210	880,957	1,389,220	859,584
Maize ..	398,949	297,140	286,178	400,544	315,140
Barley ..	260,248	374,876	370,943	322,318	354,539
Orchards and Fruit Gardens ..	276,904	275,245	276,451	277,826	277,476
Sugar-cane ..	273,512	288,872	284,828	291,299	299,314
Potatoes ..	138,776	136,925	139,445	163,231	138,068
Vineyards ..	114,394	111,697	112,126	113,252	115,297
All other crops ..	233,986	207,101	189,913	228,694	205,683
Total ..	17,278,191	16,793,578	17,772,499	19,219,394	21,189,557

Seasonal and economic influences are reflected in the areas of the principal crops grown in Australia during the past five years. Since 1924-25 the areas devoted to the various crops have increased in several instances, the greatest being that for wheat, followed by green forage and barley, while decreases occurred principally in the areas under hay, oats, and maize.

§ 4. Wheat.

1. Progress of Wheat-Growing.—(i) *Area and Production.* Wheat is the principal crop raised in Australia, and its development during the past 30 years constitutes the most interesting feature of Australian agriculture. Since 1895, when the area under wheat amounted to 3½ million acres, an average of 343,000 acres has been added annually, until in 1928-29 more than 14 8 million acres were cut for grain. The area and yield of wheat for grain are given below for each State for the five years ended 1928-29, and are shown from the year 1860 onwards in the graphs hereinafter. An estimate is also appended for the 1929-30 crop:—

WHEAT.—AREA AND PRODUCTION, 1924-25 TO 1929-30.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25 ..	3,549,367	2,705,323	189,145	2,499,852	1,867,614	12,954	711	10,824,966
1925-26 ..	2,924,745	2,518,494	165,999	2,465,648	2,112,032	19,091	267	10,201,276
1926-27 ..	3,352,298	2,915,315	57,084	2,768,403	2,571,187	23,194	438	11,687,919
1927-28 ..	3,029,950	3,064,172	215,073	2,941,360	2,998,523	29,448	562	12,279,088
1928-29 ..	4,090,083	3,718,904	218,069	3,445,563	3,343,530	22,570	1,394	14,840,113
1929-30(a) ..	3,902,200	3,566,135	204,116	3,645,764	3,568,225	17,200	1,250	14,904,890
YIELD.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush.	Bushels.
1924-25 ..	59,752,435	47,364,495	2,779,829	30,528,625	23,887,397	231,388	14,565	164,558,734
1925-26 ..	33,800,619	29,255,534	1,973,477	23,603,101	20,471,177	395,603	4,881	114,504,392
1926-27 ..	47,373,713	46,886,020	379,339	35,558,711	30,021,016	537,000	5,487	160,761,886
1927-28 ..	27,042,000	26,160,814	3,783,584	24,066,012	36,370,219	773,142	4,004	118,199,775
1928-29 ..	49,257,000	46,818,833	2,515,561	26,826,094	33,790,040	455,336	16,557	159,679,421
1929-30(a) ..	33,948,000	25,412,527	4,235,172	23,345,093	39,081,183	430,000	10,000	126,462,035

(a) Final estimate.

The area devoted to the production of wheat for grain increased steadily until 1915-16, when 12,484,512 acres were sown, largely as the result of a special war effort. After that year, however, there was a serious decline, brought about by war conditions and unfavourable seasons, and the area in 1919-20 fell to 6,419,160 acres, or only half that of 1915-16. The promise of remunerative Government guarantees, coupled with the prospects of high prices, was responsible for a marked advance in 1920-21, and the area has been extended during each of the subsequent years, the total gain for Australia since 1919-20 amounting to more than 8 million acres.

Although final figures for 1929-30 for all the States are not yet available, the data to hand indicate the total area under wheat for grain in Australia at about 14,904,890 acres, an increase of 64,777 acres on the previous year's record figure, and the greatest area yet devoted to the cultivation of this cereal. The season throughout was unfavourable, except in Western Australia, where a record yield was obtained. Drought conditions prevailed over the wheat belts of the rest of Australia, and resulted in a harvest of only 126,462,035 bushels, or an average of 8.47 bushels per acre. This figure is about 3.73 bushels below the average for the decennium ending 1928-29, and is the lowest obtained since 1919-20.

The harvest of 179,065,703 bushels reaped in 1915-16 represents the maximum production of wheat in Australia. The annual production during the seasons 1919-20 to 1928-29 averaged 127,308,997 bushels, and the extent to which this average may be exceeded during any year depends in a great measure on seasonal conditions. For the last ten seasons the yield has exceeded 100 million bushels, the average for the period being 135,357,701 bushels. This is the first occasion on which such a succession of good harvests has occurred, despite some unfavourable seasons, and the result exemplifies the value of bare fallowing, seed selection, and the application of manures. It is the considered opinion of agricultural experts that the improved cultural methods practised by modern wheat-growers preclude the possibility of absolute failure of this crop.

(ii) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the last five seasons, and for the decennium 1919-29 :—

WHEAT.—YIELD PER ACRE, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924-25 ..	16.83	17.51	14.70	12.21	12.79	17.86	20.49	15.20
1925-26 ..	11.56	11.64	11.89	11.60	9.69	20.72	18.28	11.22
1926-27 ..	14.13	16.08	6.65	12.84	11.68	23.15	12.53	13.75
1927-28 ..	8.92	8.54	17.59	8.16	12.12	26.25	7.12	9.63
1928-29 ..	12.04	12.59	11.54	7.79	10.10	20.17	11.88	10.76
Average 10 seasons, 1919-29	12.47	13.72	14.40	11.11	10.87	21.53	14.61	12.20

As the above figures show, there were considerable variations in the average yields, chiefly due to the vagaries of the seasons. Considerable improvement has been shown in the average yields for the past three decades, the figures being 9.09, 11.17, and 12.20 bushels per acre respectively. The increased yields of the later years are principally due to the better cultural methods employed in wheat farming. The excellence of the 1924-25 season is reflected in the splendid average of 15.20 bushels obtained in that year, which has been exceeded on two occasions only, viz., 16.08 bushels in 1920-21 and 16.35 bushels in 1866, when less than 1,000,000 acres were sown in relatively fertile areas.

(iii) *Relation to Population.* During the seasons embraced in the following table, the Australian production of wheat per head of population has varied between 18 bushels in 1927-28 and 28 bushels in 1924-25. The State in which wheat growing occupies the most important position relatively to population is Western Australia, which in 1928-29 had a yield averaging 83 bushels per head. Queensland and Tasmania are the States in which the average production of wheat per head is least, the quantity raised being generally below that required for local consumption. Particulars for the past five seasons are as follows :—

WHEAT.—YIELD PER 1,000 OF POPULATION, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924-25 ..	26,504	28,583	3,329	56,691	65,602	1,062	4,858	28,107
1925-26 ..	14,706	17,372	2,292	51,852	55,003	1,823	1,240	19,019
1926-27 ..	20,178	27,389	430	62,781	79,266	2,501	1,115	26,309
1927-28 ..	11,266	15,023	4,208	41,798	92,712	3,582	698	18,958
1928-29 ..	20,146	26,602	2,746	46,332	83,227	2,098	2,069	25,198

The normal annual consumption of wheat in Australia, exclusive of the requirements for seed, poultry and other live stock, is 276 lb. (4.59 bushels) per head of population.

2. *Australian and Foreign Wheat Yields.*—(i) *Average Yield.* The next table gives the average return per acre in the principal wheat-growing countries of the world, ranging from a maximum in Netherlands of 41 bushels per acre to a minimum in the Union of South Africa of 8 bushels per acre. Australia, with approximately 14, occupies a relatively subordinate position, but in comparison with the yields obtained in those countries where wheat is extensively grown the results obtained in Australia are very satisfactory. Germany, with 27.59 bushels; France, 21.02 bushels; Canada, 19.39 bushels; Italy, 18.20 bushels; and United States, 14.36 bushels, exceed the Australian average, but the latter is in excess of the yields obtained in the Soviet Republics, India, Argentina, and Rumania.

WHEAT.—YIELD PER ACRE, VARIOUS COUNTRIES, 1925 TO 1928.

Country.	Average Yield in Bushels per acre.		Country.	Average Yield in Bushels per acre.	
	Average, 1925-1927.	1928.		Average, 1925-1927.	1928.
Netherlands ..	41.32	49.52	Chile ..	17.46	18.34
Belgium ..	39.23	42.29	Lithuania ..	16.83	16.08
Denmark ..	38.59	33.42	Jugo-Slavia ..	15.80	17.49
New Zealand ..	33.87	32.94	United States of America ..	14.36	15.64
United Kingdom ..	32.51	34.12	Spain ..	14.05	14.40
Switzerland ..	32.45	33.40	Australia ..	13.97	10.76
Sweden ..	32.16	34.09	Rumania ..	12.99	14.58
Germany ..	27.59	33.17	Peru ..	12.33	12.28
Egypt ..	25.80	23.47	Soviet Republics	12.20	10.31
Japan ..	25.23	25.66	Argentine Republic	11.62	15.31
Czecho-Slovakia ..	24.55	27.59	Uruguay ..	11.22	12.11
Norway ..	24.51	28.14	Korea ..	11.22	9.60
Brazil ..	22.82	22.76	Portugal ..	11.02	6.85
Austria ..	21.53	25.13	India ..	10.53	8.97
France ..	21.02	21.71	Cyprus ..	10.23	9.25
Hungary ..	20.68	23.94	Greece ..	9.99	9.84
Canada ..	19.39	22.12	French Morocco ..	9.09	8.84
Italy ..	18.20	18.64	Union of South Africa ..	8.30	7.04
Poland ..	18.09	18.68			
Bulgaria ..	17.71	18.24			

(a) Year 1927.

(ii) *Total Production.* The latest available official statistics of the production of wheat in various countries are given in the following table :—

WHEAT.—YIELD IN VARIOUS COUNTRIES, 1925 TO 1928.

Country.	Yield in Bushels ('000 omitted).		Country.	Yield in Bushels ('000 omitted).	
	Average, 1925-1927.	1928.		Average, 1925-1927.	1928.
United States of America ..	792,401	902,784	French Morocco ..	22,672	24,747
Soviet Republics ..	784,801	783,232	Belgium ..	14,521	17,987
Canada ..	435,731	533,581	Sweden ..	13,996	19,156
India ..	328,272	288,811	Syria ..	13,060	6,490
France ..	279,583	281,288	Greece ..	11,771	13,086
Italy ..	219,101	228,600	Uruguay ..	11,744	15,215
Argentine Republic	217,046	307,365	Portugal ..	11,708	7,546
Spain ..	151,340	119,886	Tunis ..	11,024	12,125
Australia ..	131,155	159,679	Austria ..	10,690	12,917
Germany ..	111,389	141,594	Mexico ..	10,238	11,031
Rumania ..	104,121	115,546	Korea ..	10,023	8,595
Hungary ..	74,506	99,212	Denmark ..	9,308	12,215
Jugo-Slavia ..	68,882	103,295	Union of South Africa ..	7,503	6,930
Poland ..	59,154	59,219	New Zealand ..	7,214	8,400
United Kingdom ..	53,227	49,762	Netherlands ..	5,740	7,335
Bulgaria ..	46,019	50,692	Brazil ..	4,945	(a) 4,203
Czecho-Slovakia ..	40,215	51,500	Lithuania ..	4,913	6,327
Egypt ..	39,267	37,311	Switzerland ..	3,888	4,248
Japan ..	29,065	30,812	Peru ..	3,002	(a) 3,149
Algeria ..	28,182	30,302	Cyprus ..	1,859	1,557
Chile ..	26,394	(a) 28,307			

(a) Year 1927.

NOTE.—The harvests reported above for 1928 relate to the year 1928 for the Northern, and 1928-29 for the Southern Hemisphere.

The complete compilation of the world's production of wheat is not possible owing to the failure of certain countries to report their harvests. The International Institute of Agriculture, Rome, has, however, compiled figures obtained from all the producing countries reporting, with the following results :—

WHEAT.—WORLD'S PRODUCTION(a), 1909-13 TO 1928.

Years.		Area.	Yield.	Yield per acre.
		Acres.	Bushels.	Bushels.
Average, 1909-1913		270,266,000	3,779,479,000	13.98
1925	..	280,549,927	4,082,405,114	14.57
1926	..	299,260,339	4,250,239,313	14.27
1927	..	308,944,188	4,304,550,176	13.98
1928	..	303,606,622	4,612,153,735	15.02
Average, 1925-1928		298,840,269	4,312,337,084	14.43

(a) From countries reporting.

It is stated in the Report of the Institute that if all countries for which progress data are lacking were taken into account, the world's total production of wheat may be approximately estimated at 4,500 million bushels.

The total area harvested in 1928 shows a slight decrease on the figures for the previous year, the Soviet Union being chiefly responsible for the decline recorded. The other great divisions of the world showed little change in the area harvested, which exceeded the pre-war average by more than 36,000,000 acres. In comparison with the pre-war period, areas sown to wheat are still 2 per cent. lower in European Countries, exclusive of the Soviet Union, though considerably more in other continents, especially in North America, Argentina and Australia.

Although the area sown was below that of the previous year, favourable weather conditions resulted in an increased yield for the Northern Hemisphere of approximately 200 million bushels. In the Southern Hemisphere similar conditions prevailed and consequently the world's total output was the greatest since the war, exceeding the 1909-13 average by 833,000,000 bushels.

The Australian contribution to the world's average production shown above during the past four years amounted to almost $3\frac{1}{4}$ per cent.

3. Prices of Wheat.—(i) *British Wheat.* Since the United Kingdom is the largest importer of Australian wheat, the price of wheat in the British markets is a matter of prime importance to the local producer. The table below gives the average prices per Imperial quarter realized for British grown wheat :—

BRITISH WHEAT.—PRICES PER QUARTER, 1861 TO 1929.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1861	.. 55 4	61 6	50 0	1921	.. 71 6	89 10	44 0
1871	.. 56 8	60 0	52 6	1923	.. 42 2	49 3	37 6
1881	.. 45 4	55 2	40 9	1924	.. 49 3	56 1	41 5
1891	.. 37 0	41 8	32 3	1925	.. 52 2	59 3	43 11
1901	.. 26 9	27 8	25 8	1926	.. 53 3	62 2	47 6
1911	.. 31 8	33 4	30 0	1927	.. 49 3	54 8	42 2
1919	.. 72 11	73 4	72 5	1928	.. 42 10	48 3	38 11
1920	.. 80 10	90 11	72 6	1929	.. (a)	(a)	(a)

(a) See Appendix.

(ii) *Australian Export Values.* In the next table will be found a statement of the export values of Australian wheat during each of the last five years :—

AUSTRALIAN WHEAT.—EXPORT VALUES, 1925-26 TO 1929-30.

Item.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
Price per bushel	s. d. 6 4	s. d. 5 7	s. d. 5 6	s. d. 4 10	s. d. 5 0

The export values here shown are the values for the successive years in the principal markets of Australia.

4. Imports and Exports of Wheat and Flour.—(i) *Quantities.* The table hereunder shows the imports, exports, and net exports of wheat and flour from 1924-25 to 1928-29. For the sake of convenience, flour has been expressed at its equivalent in wheat, 1 ton of flour being taken as equal to 48 bushels of grain. In ordinary seasons the Australian imports of wheat and flour are negligible. During the past five years the exports ranged between 73,864,517 bushels in 1927-28 and 125,044,344 bushels in 1924-25, the net exports for the period averaging 96,748,259 bushels.

WHEAT AND FLOUR.—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bushels. ^a	Bushels.	Bushels.	Eq. Bushels. ^a	Bushels.	Bushels.
1924-25	42	2,784	2,826	103,538,088	21,506,256	125,044,344	125,041,518
1925-26	13	3,456	3,469	54,227,728	24,049,536	78,277,264	78,273,795
1926-27	257	3,456	3,713	73,925,315	23,686,272	97,611,587	97,607,874
1927-28	133	1,200	1,333	53,042,357	20,822,160	73,864,517	73,863,184
1928-29	25	3,840	3,865	81,896,245	27,062,544	108,958,789	108,954,924

(a) Equivalent in bushels of wheat.

(ii) *Destination of Exported Breadstuffs.* The United Kingdom is generally the largest importer of Australian wheat and during the year 1928-29 imported 20,564,650 bushels, or 25 per cent. of the total quantity exported. India, however, was the greatest purchaser during this year, and the quantity imported amounted to more than 26 million bushels, or 32 per cent. of the total exports. Other countries importing considerable quantities of Australian wheat were Italy, Japan, Egypt, South Africa and France, which together with the United Kingdom and India accounted for 85 per cent. of the total quantity exported.

The export of flour from Australia during 1928-29 amounted to 563,803 tons, and is the greatest quantity yet exported in any year. The largest consignments were taken by Egypt, the Netherlands East Indies, the United Kingdom and Malaya (British), which together accounted for 76.7 per cent. of the total exports.

5. Local Consumption of Wheat.—The estimated consumption of wheat for food and for seed purposes in Australia during the past ten years is given in the following tables :—

WHEAT.—HUMAN CONSUMPTION, AUSTRALIA, 1919-20 TO 1928-29.

Year.	Flour Milled.	Net Exports of Flour.		Net Quantity Available for Home Consumption.		Net Quantity Available per Head of Population.	
		Flour.	Flour in Biscuits Exported.	Flour.	Equivalent in Terms of Wheat.	Flour.	Equivalent in Terms of Wheat.
	Tons.	Tons.	Tons.	Tons.	Bushels.	Tons.	Bushels.
1919-20 ..	1,050,228	517,708	4,590	527,930	25,340,640	.1000	4.801
1920-21 ..	801,511	229,648	3,375	568,488	27,287,420	.1052	5.050
1921-22 ..	911,452	359,698	2,284	549,470	26,374,560	.0999	4.798
1922-23 ..	985,479	394,457	1,831	589,191	28,281,170	.1049	5.034
1923-24 ..	1,092,856	511,151	1,727	579,978	27,838,940	.1011	4.853
1924-25 ..	1,068,698	447,989	1,814	618,895	29,706,960	.1054	5.058
1925-26 ..	1,185,968	500,960	2,473	682,535	32,761,680	.1139	5.467
1926-27 ..	1,141,748	493,392	1,570	646,786	31,045,730	.1058	5.081
1927-28 ..	1,092,632	433,770	1,613	657,249	31,547,950	.1054	5.060
1928-29 ..	1,171,759	563,723	1,512	606,524	29,113,150	.0957	4.594
Aggregate 10 years	10,502,331	4,452,496	22,789	6,027,046	289,298,200	.1036	4.973

WHEAT USED FOR SEED.—AUSTRALIA, 1919 TO 1928.

Year.	Area for Grain and Hay.	Wheat for Seed Purposes.		
		Quantity.	Per Acre.	Per Head of Population.
	Acres.	Bushels.	Bushels.	Bushels.
1919	8,250,572	7,774,000	.942	1.466
1920	10,271,055	9,471,000	.922	1.760
1921	10,878,401	10,077,000	.926	1.847
1922	11,253,078	10,456,000	.929	1.878
1923	11,016,608	10,328,000	.937	1.816
1924	11,859,102	10,967,000	.925	1.890
1925	11,405,943	10,627,000	.932	1.774
1926	12,543,025	11,591,000	.924	1.897
1927	13,390,294	12,417,000	.927	1.992
1928	15,882,335	14,651,000	.922	2.312
Aggregate for 10 years ..	116,750,413	108,359,000	.928	1.863

In addition to the above, the quantity of grain fed to poultry and other live stock as well as that used as seed for green forage crops must be taken into consideration. These quantities vary from year to year according to the price of wheat and the nature of the season, and sufficient data are not available on which to base an annual estimate, but, taken over a period, the amount so consumed has been estimated to range from one half to one bushel per head of population per annum. The flour available for human consumption necessarily fluctuates from year to year coincident with stocks. In some years the flour available per head of population, after deducting net exports from the quantity milled, shows a substantial increase over the average for the previous year, this, however, being counterbalanced by a decline in the following year. The average quantity of

flour consumed per annum for the ten years under consideration was 0.1036 tons per head of population, which, expressed in equivalent terms in wheat, represents 4.973 bushels. The estimates of quantity of grain used for seed purposes are based on data supplied by the Agricultural Departments of the several States giving average quantities of seed used per acre for wheat sown either for grain or hay. The average annual quantity thus used during the ten years was 1.863 bushels per head of population, and 0.928 bushels or 56 lbs. per acre sown. For all purposes the consumption of wheat in Australia during the past four years averaged 45,928,000 bushels, or 7.45 bushels per head of the population.

6. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in Australia during the season 1928-29 is shown below:—

WHEAT.—VALUE OF CROP(a), 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	11,852,470	11,119,473	639,372	6,343,253	8,236,322	108,140	3,984	38,303,014
Value per acre ..	£2/18/0	£2/19/10	£2/18/8	£1/16/10	£2/9/3	£4/15/10	£2/17/2	£2/11/8

(a) Exclusive of the value of straw.

7. **Voluntary Wheat Pools.**—Reference to the operations of the voluntary Wheat Pools in the various States during 1929-30 will be found in the Appendix at the end of this volume.

§ 5. Oats.

1. **Progress of Cultivation.**—(i) *Area and Yield.* Oats came next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for 70.04 per cent., oats represented only 4.93 per cent. of the area under crop in Australia. The area under cultivation of oats for the last five years is shown in the table hereunder, and more fully in the graphs herein:—

OATS.—AREA AND YIELD, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
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AREA.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25	122,994	517,229	4,010	155,214	318,982	46,175	523	1,165,127
1925-26	100,652	437,696	1,293	158,062	278,344	36,741	445	1,013,233
1926-27	104,450	303,424	210	152,178	234,826	48,361	665	844,114
1927-28	114,988	529,392	2,272	197,024	235,469	42,950	208	1,122,303
1928-29	126,743	347,021	916	207,266	325,827	37,602	295	1,045,670

YIELD.

	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924-25	2,500,951	9,572,003	63,912	1,939,415	4,241,074	1,065,933	10,449	19,393,737
1925-26	1,607,520	4,998,165	14,546	1,808,443	2,939,380	835,473	8,130	12,211,657
1926-27	1,890,746	4,834,006	1,674	1,713,337	2,716,436	1,357,000	8,004	12,571,203
1927-28	1,654,560	4,682,724	43,788	1,378,437	2,922,865	1,399,824	2,067	12,084,265
1928-29	2,183,880	5,602,409	13,737	1,740,515	3,554,609	1,011,367	2,160	14,108,677

The oat crop showed considerable variation during the past decennium, ranging from 12,084,265 bushels in 1927-28 to 19,393,737 bushels in 1924-25, with an average around 14,500,000 bushels. The demand for the grain for oatmeal is limited to about 2,000,000 bushels annually. It is mainly used as feed grain, and its value, particularly in good seasons, is not sufficient to warrant the increase in cultivation which may be expected when oats are more generally marketed through live stock and better prices thereby realized than those now offering on the local market.

The principal oat-growing State is Victoria, which produces on the average more than one-third of the total quantity of oats grown in all States. For Australia as a whole the record yield of oats was obtained during 1924-25, when 19,393,737 bushels were harvested.

(ii) *Average Yield.* The average yield per acre of oats varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield in each of the last five seasons, and for the decennium 1919 to 1929 are given in the succeeding table :—

OATS.—AVERAGE YIELD PER ACRE, 1924-25 TO 1928-29.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Aus-tralia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924-25	20.33	18.51	15.94	12.50	13.30	23.08	19.98	16.65
1925-26	15.97	11.42	11.25	11.44	10.56	22.74	18.27	12.05
1926-27	18.10	16.10	7.97	11.26	11.57	28.06	12.04	14.89
1927-28	14.39	8.85	19.27	7.00	12.41	32.59	9.94	10.77
1928-29	17.23	16.14	15.00	8.40	10.91	26.90	7.32	13.49
Average for 10 seasons 1919-29	16.83	15.84	17.23	10.38	11.68	27.35	15.03	14.56

The smallest average yield per acre ever recorded for Australia was that experienced in the abnormally dry season 1914-15, viz., 5.60 bushels, while the largest in the past ten years was that of the season 1920-21, amounting to 19.77 bushels per acre.

(iii) *Relation to Population.* The State in which oat production occupies the most important position in relation to population is Western Australia, the yield for that State representing about 8 bushels per head during the last five years, as compared with 2.33 bushels per head for Australia as a whole. Particulars for the seasons 1924-25 to 1928-29 are furnished in the succeeding table :—

OATS.—YIELD PER 1,000 OF POPULATION, 1924-25 TO 1928-29.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Aus-tralia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924-25	1,109	5,776	76	3,601	11,647	4,893	3,485	3,302
1925-26	699	2,968	17	3,278	7,898	3,850	2,066	2,038
1926-27	805	2,853	2	3,025	7,172	6,319	1,627	2,057
1927-28	689	2,689	49	2,394	7,451	6,485	360	1,938
1928-29	893	3,181	15	3,006	8,755	4,661	270	2,226

2. *Comparison with other Countries.*—(i) *Total Production.* A comparison of the Australian production of oats with that of the leading oat-producing countries of the world is given in the following table :—

OATS.—PRODUCTION IN VARIOUS COUNTRIES, 1925 TO 1928.

Country.	Yield in Bushels (000 omitted).		Country.	Yield in Bushels (000 omitted).	
	Average, 1925-1927.	1928.		Average, 1925-1927.	1928.
United States of America ..	1,052,863	1,159,629	Jugo-Slavia ..	18,275	20,189
Soviet Republics ..	728,396	873,212	Netherlands ..	17,063	19,841
Canada ..	378,676	384,327	Lithuania ..	15,562	14,702
Germany ..	335,393	385,573	Latvia ..	13,906	8,030
France ..	275,831	272,204	Australia ..	12,289	14,109
United Kingdom ..	133,305	135,718	Norway ..	10,145	10,144
Poland ..	113,405	137,662	Algeria ..	9,351	11,594
Czecho-Slovakia ..	75,555	78,445	Japan ..	9,035	9,214
Sweden ..	65,562	66,553	Estonia ..	6,565	5,453
Argentine Republic	53,067	52,138	Bulgaria ..	6,423	5,771
Rumania ..	50,839	54,037	Union of South Africa ..	4,682	6,079
Denmark ..	49,876	58,368	Portugal ..	4,251	3,101
Belgium ..	37,156	38,820	Greece ..	4,238	4,197
Irish Free State ..	37,046	35,688	Chile ..	4,192	4,224
Finland ..	33,295	31,404	New Zealand ..	4,047	3,417
Spain ..	32,093	27,825	Korea ..	3,218	3,249
Italy ..	31,691	38,730	Switzerland ..	2,315	2,342
Austria ..	23,186	25,473	Uruguay ..	2,007	3,173
Hungary ..	19,426	22,024	Tunis ..	1,699	1,791

(ii) *Yield per Acre.* The average yield per acre of oats is very low in Australia compared with other countries where its cultivation is more extensive. Arranging the countries contained in the foregoing table according to the magnitude of average yield for the years specified, the results are as follows :—

OATS.—YIELD PER ACRE, VARIOUS COUNTRIES, 1925 TO 1928.

Country.	Yield in Bushels per acre.		Country.	Yield in Bushels per acre.	
	Average, 1925-27.	1928.		Average, 1925-27.	1928.
Irish Free State ..	56.61	55.02	United States of America ..	24.02	27.79
Belgium ..	56.32	58.21	Argentine Republic	22.25	14.65
Denmark ..	47.36	58.40	Poland ..	20.65	27.33
Switzerland ..	46.25	46.47	Jugo-Slavia ..	20.59	22.10
Netherlands ..	45.95	52.68	Bulgaria ..	19.30	19.67
United Kingdom ..	43.48	46.04	Soviet Republics	19.19	20.81
Norway ..	42.18	41.24	Rumania ..	18.44	19.59
New Zealand ..	40.04	41.91	Lithuania ..	18.23	20.64
Germany ..	39.14	44.34	Estonia ..	18.02	17.02
Sweden ..	36.78	38.79	Latvia ..	17.67	13.62
Czecho-Slovakia ..	36.43	37.91	Spain ..	17.29	14.16
Japan ..	32.40	32.38	Greece ..	16.31	15.15
France ..	32.05	31.44	Uruguay ..	15.75	20.40
Finland ..	30.51	27.56	Algeria ..	15.59	19.30
Chile ..	30.25	31.73	Australia ..	12.37	13.49
Austria ..	30.16	34.25	Korea ..	11.82	12.26
Hungary ..	28.58	33.78	Portugal ..	8.06	7.67
Canada ..	27.95	29.26			
Italy ..	26.16	30.08			

(a) 1927 figures.

3. *World's Production.*—The production of oats in the world for the year 1928, as reported by the International Institute of Agriculture, amounted to 4,032 millions of bushels. Compared with 1927 the area in 1928 declined slightly, but a favourable season resulted in an increased yield of 500 million bushels over that for the earlier year. The average yield per acre in 1928 was 27.4 bushels. In the pre-war years 1909 to 1913 the production averaged 3,613 millions of bushels from an average area of 142,870,000

acres. Subsequently the area declined principally in Europe, but a considerable increase was recorded in North America, with the result that the area in 1928 amounted to 147,000,000 acres.

4. **Price of Oats.**—The average wholesale prices of oats in the markets of the several capitals for the year 1928–29 are given in the following table:—

OATS.—AVERAGE WHOLESALE PRICES, 1928–29.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	4 7½	3 4½	5 0½	2 11	3 5½	3 6

5. **Imports and Exports.**—The production of oats in Australia has not yet reached sufficient proportions to admit of a regular export trade; in fact in three of the years in the following table imports have exceeded the exports. The quantities and values of oats imported into and exported from Australia during the years 1924–25 to 1928–29 are given hereunder:—

OATS.—IMPORTS AND EXPORTS, AUSTRALIA, 1924–25 TO 1928–29.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1924–25 ..	1,723	482	219,278	42,255	217,555	41,773
1925–26 ..	266,103	49,927	76,978	15,844	—189,125	—34,083
1926–27 ..	197,070	40,553	137,768	26,301	—59,302	—14,252
1927–28 ..	525,568	92,301	64,987	14,172	—460,581	—78,129
1928–29 ..	38,993	8,045	90,463	18,833	51,470	10,788

NOTE.—(–) signifies net import.

The principal country from which imports of oats have been obtained is New Zealand, while the principal countries to which oats were exported during the period under review were New Zealand, Malaya (British), Ceylon, and Mauritius.

6. **Oatmeal, etc.**—The production of oatmeal in Australia during 1928–29 amounted to 305,218 cwt., practically the whole of which is consumed locally. Oversea trade in this and similar products is small, the importations of oatmeal, wheatmeal and rolled oats during 1928–29 amounted to 359,363 lb., while the exports totalled 549,806 lb.

7. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of Australia for the season 1928–29 is as follows:—

OATS.—VALUE OF CROP,(a) 1928–29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	336,750	863,705	3,663	264,703	488,759	179,330	333	2,137,243
Value per acre ..	£2/13/2	£2/9/9	£4/0/0	£1/5/7	£1/10/0	£4/15/5	£1/2/7	£2/0/9

(a) Exclusive of the value of straw.

§ 6. Maize.

1. **States Growing Maize.**—Maize is grown for grain chiefly in New South Wales and Queensland, the area so cropped in these States during the season 1928–29 being 299,008 acres, or nearly 95 per cent. of the total for Australia. Of the balance, Victoria contributed 16,077 acres, and Western Australia 55 acres. The climate of Tasmania is unsuitable for the growing of maize for grain. In the States mentioned the crop is grown to a greater or less extent for green forage, particularly in connexion with the dairying industry.

2. Progress of Maize-growing.—(i) *Area and Yield.* Notwithstanding its valuable properties and its pre-eminence as the world's most extensively grown cereal, the cultivation of maize has decreased in Australia during the past decennium. Compared with the previous year, the area decreased by more than 85,000 acres. The greatest area under this cereal was in 1910–11, when 414,914 acres were sown. The average area under cultivation during the decennium 1919–29 was 318,240 acres. The area and yield of maize for grain in each State are given in the following table for the last five years. The fluctuations from year to year are shown more fully on the graph herein.

MAIZE.—AREA AND YIELD, 1924–25 TO 1928–29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Nor. Ter.	Fed. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924–25	146,564	23,126	229,160	7	71	21	..	398,949
1925–26	120,955	21,913	154,252	2	8	10	..	297,140
1926–27	128,512	20,046	137,542	2	32	40	4	286,178
1927–28	148,801	17,645	234,013	..	63	10	12	400,544
1928–29	106,835	16,077	192,173	..	55	..	..	315,140
YIELD.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924–25	4,208,200	891,987	7,330,821	276	333	420	..	12,432,037
1925–26	3,278,350	768,761	3,384,172	51	227	..	..	7,431,561
1926–27	3,625,410	685,407	2,658,895	99	342	..	120	6,970,273
1927–28	3,930,570	757,780	6,703,518	..	1,098	..	84	11,393,050
1928–29	2,506,470	679,810	5,135,607	..	831	..	..	8,322,718

The maximum production of maize in Australia was recorded in 1910–11, when the harvest amounted to over 13,000,000 bushels. This figure was considerably in excess of the yields during recent years, except that of 1924, when a bountiful harvest in Queensland increased the Australian total to 12,500,000 bushels. The yield for the year under review amounted to 8,322,718 bushels, but the average for the past decennium was only 8,392,000 bushels.

(ii) *Average Yield.* The following table gives particulars of the average yield per acre of the maize crops of the States for the seasons 1924–25 to 1928–29, and for the decennium 1919–1929:—

MAIZE.—AVERAGE YIELD PER ACRE, 1924–25 TO 1928–29.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924–25	28.71	38.57	31.99	39.43	4.70	20.00	..	31.16
1925–26	27.10	35.08	21.94	25.50	28.38	..	..	25.01
1926–27	28.21	34.19	19.33	49.50	10.69	..	30.00	24.36
1927–28	26.42	42.95	28.65	..	17.43	..	7.00	28.45
1928–29	23.46	42.28	26.72	..	15.11	..	..	26.41
Average for 10 seasons 1919–29	27.21	40.18	23.66	17.83	13.22	7.34	22.00	26.37

The average yield of maize per acre in Victoria during the year 1928-29 was the highest in the world. This is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts peculiarly suited to its growth. The average yield in New South Wales generally exceeds that obtained in Queensland.

(iii) *Relation to Population.* During the past five seasons the Australian production of maize has averaged just under $1\frac{1}{2}$ bushels per head of population, while the average for Queensland, the State in which the production per head is highest, amounted to approximately $6\frac{1}{2}$ bushels. Details for the several States during the past five seasons are as follow:—

MAIZE.—YIELD PER 1,000 OF POPULATION, 1924-25 TO 1928-29.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924-25 ..	1,866	538	8,781	1	1	117	..	2,117
1925-26 ..	1,426	457	3,930	..	1	..	..	1,240
1926-27 ..	1,544	400	3,013	..	1	..	24	1,141
1927-28 ..	1,638	435	7,455	..	3	..	15	1,827
1928-29 ..	1,025	489	9,515	..	2	..	..	1,313

3. *Australian and Foreign Maize Production.*—(i) *Total Yield.* The United States of America is the most important maize-producing country of the world. Approximately 100,000,000 acres are planted annually, and nearly 3,000,000,000 bushels are reaped, representing about 75 per cent. of the world's production. Of the huge quantities raised, about 85 per cent. is fed to live stock on farms, 10 per cent. is used for human food, and only a very small fraction, viz., $1\frac{1}{2}$ per cent., is exported. The yields of the various countries are as follows:—

MAIZE.—PRODUCTION IN VARIOUS COUNTRIES, 1925 TO 1928.

Country.	Yield in Bushels (000 omitted).		Country.	Yield in Bushels (000 omitted).	
	Average, 1925-1927.	1928.		Average, 1925-1927.	1928.
United States of America ..	2,771,036	2,839,935	Portugal ..	11,738	a12,275
Argentina Republic ..	301,849	231,704	Czecho-Slovakia ..	10,909	8,763
Rumania ..	181,248	108,513	Australia ..	8,598	8,323
Brazil ..	143,800	c158,260	Belgian Congo ..	8,530	c8,464
Soviet Republics ..	143,608	133,023	Canada ..	7,547	5,241
Jugo-Slavia ..	122,163	71,613	Greece ..	7,045	5,072
Italy ..	105,149	64,990	French Indo-China ..	6,461	8,248
India ..	80,627	a76,760	French Equatorial and West Africa ..	6,009	6,247
Egypt ..	79,893	a80,586	Rhodesia ..	5,875	c6,820
Mexico ..	78,980	83,916	Uruguay ..	5,830	2,966
Hungary ..	77,621	49,592	Madagascar ..	4,177	c4,166
Dutch East Indies ..	74,542	a78,618	Guatemala ..	4,171	4,195
Union of South Africa ..	59,031	69,400	Austria ..	4,139	4,248
Bulgaria ..	26,044	18,290	Kenya ..	3,964	4,854
Spain ..	23,833	21,059	Salvador ..	3,543	b10,629
Philippine Islands ..	18,233	16,765	Poland ..	3,406	c4,042
France ..	17,716	12,115	Japan ..	3,286	a2,971
			Korea ..	2,845	3,190
			Paraguay ..	760	c2,280

(a) Year 1926.

(b) Year 1924.

(c) Year 1927.

(ii) *Yield per Acre.* The average yield of maize per acre in Australia during 1928-29 was 26.41 bushels, which may be regarded as satisfactory when compared with those of other maize-producing countries, the yields per acre for which are shown in the following table :—

MAIZE.—YIELD PER ACRE IN VARIOUS COUNTRIES, 1925 TO 1928.

Country.	Average Yield per acre in Bushels.		Country.	Average Yield per acre in Bushels.	
	Average, 1925-1927.	1928.		Average, 1925-1927.	1928.
Canada	39.03	37.65	French Indo-China	19.48	28.29
Egypt	37.13	a37.23	Rhodesia	19.12	a18.83
Belgian Congo ..	35.71	a36.06	Rumania	18.02	9.86
Argentine Republic	31.80	d34.72	Bulgaria	16.68	11.47
Hungary	29.44	18.91	Salvador	16.67	c16.67
Czecho-Slovakia ..	29.27	24.70	Dutch East Indies	16.48	a16.46
Austria	27.94	29.75	Portugal	16.04	d15.77
United States of America	27.76	28.19	Poland	15.84	14.95
Italy	27.76	17.52	French Equatorial and West Africa	15.32	d10.85
Australia	26.22	26.41	Philippine Islands	14.35	11.90
Japan	25.16	a23.07	India	14.33	d13.91
Jugo-Slavia	24.02	14.27	Greece	13.55	11.19
Brazil	24.02	d20.21	Guatemala	13.53	14.04
Spain	21.54	21.95	Union of South Africa	12.68	12.43
Kenya	21.07	d21.23	Uruguay	11.65	5.69
France	20.85	14.26	Korea	11.57	12.52
Madagascar	20.55	d20.72	Mexico	10.56	11.03
Paraguay	19.97	b19.97	Basutoland	8.34	a9.87
Soviet Republics ..	19.95	12.17			

(a) Year 1926.

(b) Year 1925.

(c) Year 1924.

(d) Year 1927.

4. *World's Production.*—The maize harvest in 1925, when the production amounted to 4,685 million bushels, was one of the most abundant on record. Since then the total yield has declined although the area showed only a slight falling off, except in 1928 when an increase of approximately 7 million acres was recorded. The average yields per acre since 1926 are 24, 23, and 22 bushels respectively. The total yields from 1909 to 1928 were as follows :—

Average 1909 to 1913,	4,119,000,000 bushels.
1924,	3,855,000,000 bushels.
1925,	4,685,000,000 "
1926,	4,463,700,000 "
1927,	4,391,000,000 "
1928,	4,248,000,000 "

5. *Price of Maize.*—The average wholesale price of maize in the Sydney market for each of the last five years is given in the following table :—

MAIZE.—AVERAGE PRICE, SYDNEY, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	3 11	5 8	6 10	4 7	4 11½

6. **Oversea Imports and Exports.**—The decline in the production of maize in Australia of late years has necessitated an average annual import of more than 1,000,000 bushels during the past quinquennium, the bulk of the supplies being furnished by South Africa. Details of imports and exports for the years 1924-25 to 1928-29 are as follows :—

MAIZE.—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1924-25 ..	480	242	2,554,052	511,921	—2,553,572	—511,679
1925-26 ..	1,562,453	323,486	54,720	14,734	1,507,734	308,752
1926-27 ..	1,173,514	277,821	2,477	890	1,171,037	276,931
1927-28 ..	115,638	25,443	145,402	24,421	— 29,764	1,022
1928-29 ..	773	539	278,289	50,451	— 277,516	— 49,912

NOTE.—(—) denotes net exports.

7. **Prepared Maize.**—A small quantity of corn-flour is imported annually into Australia, the principal countries of supply being the United Kingdom, South Africa, and the United States of America. During the year 1928-29 the imports amounted to 1,032,463 lb., and represented a value of £10,838. The exports from Australia are small, and in 1928-29 amounted to only 21,505 lb., valued at £517.

8. **Value of Maize Crop.**—The value of the Australian maize crop for the season 1928-29 has been estimated at £1,664,851, made up as follows :—

MAIZE.—VALUE OF CROP, 1928-29.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	F.C.T.	Australia.
	£	£	£	£	£	£	£
Aggregate value	689,280	172,785	802,439	..	347	..	1,664,851
Value per acre	£6/9/0	£10/15/0	£4/3/6	..	£6/6/2	..	£5/5/8

§ 7. Barley.

1. **Progress of Cultivation.**—(i) *Area and Yield.* The area under barley in Australia has fluctuated very considerably, but results for the last ten years show a marked advance. The average annual area sown for the decennium 1919 to 1929 amounted to 318,486 acres, which was nearly double the average of the previous ten-yearly period, i.e., 178,502 acres. Victoria was originally the principal barley-growing State, but the rapid expansion of the cultivation of this crop in South Australia during recent years brought the latter State into the lead in 1913-14, and, during 1928-29, the area under barley in South Australia accounted for more than 70 per cent. of the Australian acreage. Victoria was next in importance with 21 per cent., leaving a small balance of about 9 per cent. distributed among the other States. The figures here given relate to

the areas harvested for grain; small areas only are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this subsection. The area and yield of barley for grain in the several States are shown in the following table for the last five years, while the progress since 1860 is illustrated in the graphs herein :—

BARLEY.—AREA AND YIELD, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
AREA.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1923-24 ..	6,638	63,764	8,798	166,432	11,606	3,010	260,248
1924-25 ..	6,614	103,395	7,001	239,337	13,306	5,223	374,876
1925-26 ..	5,626	88,896	399	256,528	13,826	5,665	a370,943
1926-27 ..	5,600	76,768	3,220	219,491	12,138	5,101	322,318
1928-29 ..	5,024	75,451	7,654	247,348	14,429	4,613	b354,539

YIELD.

	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924-25 ..	118,300	1,444,823	171,124	3,103,718	177,537	50,729	5,066,231
1925-26 ..	105,150	1,774,963	92,441	4,134,824	158,300	90,619	6,356,297
1926-27 ..	100,221	1,920,722	1,991	4,630,044	128,136	149,800	a6,930,953
1927-28 ..	65,850	1,552,109	72,400	3,001,420	126,835	141,407	4,960,021
1928-29 ..	80,910	1,556,118	107,593	4,583,715	189,560	99,085	b6,617,341

(a) Including Federal Capital Territory, 3 acres, 39 bushels.

(b) Including Federal Capital Territory, 20 acres, 360 bushels.

The States in which the annual production of barley averaged over 1,000,000 bushels for the past decade were South Australia and Victoria, the yields being respectively 3,607,724 and 1,850,687 bushels, the higher return per acre in the latter State tending to diminish the advantage held by South Australia in regard to acreage.

(ii) *Malting and other Barley.* (a) *Year 1928-29.* In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for the season 1928-29 are as follows :—

BARLEY, MALTING AND OTHER.—AREA AND YIELD, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley ..	2,612	49,345	5,188	234,958	10,889	4,162	307,154
Other barley ..	2,412	26,106	2,466	12,390	3,540	451	a47,385
Total ..	5,024	75,451	7,654	247,348	14,429	4,613	a354,539
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Malting barley ..	41,880	945,865	76,392	4,390,651	149,133	87,752	5,691,673
Other barley ..	39,030	610,253	31,201	193,064	40,427	11,333	a925,668
Total ..	80,910	1,556,118	107,593	4,583,715	189,560	99,085	a6,617,341

(a) Including Federal Capital Territory, 20 acres, 360 bushels.

Taking Australia as a whole, about 87 per cent. of the area under barley in 1928-29 was sown with the malting variety. The proportion varies largely in the several States.

(b) *Progress of Cultivation.* The following table sets out the acreage and yield of malting and other barley in Australia as a whole during the past five seasons:—

BARLEY, MALTING AND OTHER.—AREA AND YIELD, AUSTRALIA, 1924-25 TO 1928-29.

Season.	Acres.			Bushels.			Average Yields per Acre.		
	Malting.	Other.	Total.	Malting.	Other.	Total.	Malting.	Other.	Total.
1924-25 ..	211,761	48,487	260,248	4,163,896	902,335	5,066,231	19.66	18.61	19.47
1925-26 ..	319,441	55,435	374,876	5,401,489	954,808	6,356,297	16.91	17.22	16.96
1926-27 ..	320,846	50,097	370,943	5,872,144	1,058,809	6,930,953	18.30	21.13	18.68
1927-28 ..	276,483	45,835	322,318	4,040,975	919,046	4,960,021	14.62	20.05	15.39
1928-29 ..	307,154	47,385	354,539	5,091,673	925,668	6,017,341	18.53	19.53	18.66
Average 10 seasons 1919-29	260,578	57,908	318,486	4,768,081	1,130,340	5,898,421	18.30	19.52	18.52

During the past ten seasons the area and production of malting barley have represented more than four times the corresponding figures for other barley. The average yield per acre differs very little in respect of the two classes, the results for the past ten-yearly period being slightly in favour of the Cape variety.

(iii) *Average Yield.* The average yield of barley per acre varies considerably in the different States, being as a rule highest in Victoria and Tasmania, and lowest in Western Australia. Details for each State during the past five seasons, and for the decennium 1919-29, are given in the following table:—

BARLEY.—YIELD PER ACRE, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924-25 ..	17.82	22.66	19.45	18.65	15.30	16.85	19.47
1925-26 ..	15.90	17.17	13.20	17.28	11.89	17.35	16.96
1926-27 ..	17.81	21.61	4.99	18.05	9.27	26.44	18.68
1927-28 ..	11.76	20.22	22.48	13.67	10.45	27.72	15.39
1928-29 ..	16.10	20.62	14.06	18.53	13.14	21.48	18.66
Average for 10 seasons 1919-29	15.60	21.85	17.17	17.52	11.70	23.05	18.52

(iv) *Relation to Population.* During the last five seasons the quantity of barley produced in Australia has averaged 1 bushel per head of population. For the season 1928-29 the production ranged from 8 bushels per head in South Australia to under 2 lb. per head in New South Wales. Details for the years 1924-25 to 1928-29 are as follows:—

BARLEY.—PRODUCTION PER 1,000 OF POPULATION, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1924-25 ..	52	872	205	5,764	488	233	863
1925-26 ..	46	1,054	107	7,496	425	418	1,061
1926-27 ..	43	1,122	2	8,175	338	698	1,134
1927-28 ..	27	891	81	5,213	323	655	796
1928-29 ..	33	884	117	8,890	467	457	1,044

2. Comparison with Other Countries.—(i) *Total Yield.* In comparison with the barley production of other countries, that of Australia appears extremely small. Particulars for some of the leading countries during recent years are as follows, the Australian figures being added for the purpose of comparison :—

BARLEY.—PRODUCTION IN VARIOUS COUNTRIES, 1925 TO 1928.

Country.	Yield in Bushels (000 omitted).		Country.	Yield in Bushels (000 omitted).	
	Average, 1925-1927.	1928.		Average, 1925-1927.	1928.
Soviet Republics ..	225,754	235,215	Jugo-Slavia ..	15,958	17,381
United States of America ..	213,545	342,586	Sweden ..	13,454	9,354
Germany ..	117,697	147,574	Bulgaria ..	12,636	15,115
India ..	116,151	100,424	Italy ..	10,664	10,583
Canada ..	98,971	130,933	Egypt ..	10,625	10,366
Spain ..	91,979	79,539	Syria ..	10,353	13,157
Japan ..	83,849	78,218	Lithuania ..	10,020	6,634
Poland ..	71,520	67,338	Austria ..	9,352	12,433
Rumania ..	58,290	66,625	Greece ..	7,975	6,956
Czecho-Slovakia ..	53,877	61,821	Latvia ..	7,297	3,144
United Kingdom ..	46,879	50,352	Finland ..	6,466	5,536
France ..	45,869	48,822	Tunis ..	6,350	12,125
Korea ..	36,474	32,791	Irish Free State ..	6,131	5,900
French Morocco ..	36,441	46,301	Australia ..	6,082	6,617
Denmark ..	33,943	48,520	Chile ..	5,529	5,536
Algeria ..	30,356	38,128	Estonia ..	5,012	4,042
Hungary ..	23,880	29,445	Norway ..	4,793	4,928
Argentine Republic	15,996	16,142	Belgium ..	4,011	4,189
			Netherlands ..	3,245	4,314

(ii) *Yield per Acre.* The following table shows the average yield of barley per acre in various countries of the world, the return ranging from 49.15 bushels in Belgium to 8.91 bushels in Algeria :—

BARLEY.—AVERAGE YIELD PER ACRE IN VARIOUS COUNTRIES, 1925 TO 1928.

Country.	Yield in Bushels per acre.		Country.	Yield in Bushels per acre.	
	Average, 1925-1927.	1928.		Average, 1925-1927.	1928.
Belgium ..	49.15	54.22	Hungary ..	23.32	28.86
Netherlands ..	47.35	61.35	Bulgaria ..	23.08	25.16
Irish Free State ..	45.14	45.71	Spain ..	20.69	17.65
Denmark ..	43.57	55.32	Lithuania ..	20.09	15.87
New Zealand ..	39.67	34.08	Argentine Republic	19.25	12.22
Chile ..	38.35	35.50	Italy ..	18.32	18.89
Egypt ..	36.43	28.30	Jugo-Slavia ..	17.62	18.43
United Kingdom ..	35.95	38.77	Estonia ..	17.12	15.43
Sweden ..	34.90	34.39	Australia ..	17.08	18.66
Japan ..	34.74	34.90	Korea ..	16.73	14.84
Norway ..	33.29	33.15	Syria ..	16.46	14.75
Germany ..	32.49	42.06	Latvia ..	16.02	8.70
Czecho-Slovakia ..	31.02	34.83	India ..	15.26	12.98
France ..	26.57	27.81	Greece ..	15.04	13.94
Canada ..	26.47	26.83	Rumania ..	14.10	15.41
Austria ..	26.08	32.17	Soviet Republic ..	13.62	13.66
United States of America ..	25.18	24.30	Union of South Africa ..	12.33	11.25
Poland ..	26.04	23.57	French Morocco ..	12.16	15.94
Finland ..	23.93	20.35	Algeria ..	8.91	11.18

3. **World's Production.**—The area under barley in 1928 exceeded that of the previous year. Compared with the average pre-war area, i.e., for 1909–13, the total under cultivation in 1928, amounting to nearly 85 million acres, showed an increase of about 100,000 acres. Weather conditions were generally favourable, and the yield of 1,781 million bushels was the greatest recorded since the war. The production of barley in millions of bushels from 1909 onwards was as follows :—

	Year.			Production.	
Average 1909–1913	1,676 millions of bushels.	
1924	1,346	..
1925	1,619	..
1926	1,531	..
1927	1,567	..
1928	1,781	..

4. **Price of Barley.**—The average price of barley in the Melbourne market during each of the past five years is given in the following table :—

BARLEY.—AVERAGE MELBOURNE PRICE PER BUSHEL, 1924 TO 1928–29.

Particulars.	1924.	1925–26.	1926–27.	1927–28.	1928–29.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Malting barley	5 8	4 11	4 3	4 7½	4 7
Cape barley	4 7½	..	3 11	4 3	3 6

5. **Imports and Exports.**—Australian exports of barley during the last five years averaged 1,354,000 bushels. The grain was consigned mainly to the United Kingdom and Belgium, South Australia being the principal exporting State. Particulars of the Australian overseas imports and exports for the years 1924–25 to 1928–29 are contained in the following table :—

BARLEY.—IMPORTS AND EXPORTS, AUSTRALIA, 1924–25 TO 1928–29.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1924–25	67,242	16,926	1,490,416	420,432	1,423,174	403,506
1925–26	32	14	729,528	142,948	729,496	142,934
1926–27	696	285	2,021,480	383,103	2,020,784	382,818
1927–28	262	108	1,251,444	291,636	1,251,182	291,528
1928–29	150	58	1,279,014	228,707	1,278,864	228,649

In some years there is an export of Australian pearl and Scotch barley, the total for 1928–29 reaching 19,660 lb., valued at £155, consigned mainly to the Pacific Islands.

6. **Imports and Exports of Malt.**—In pre-war times the imports of malt into Australia were fairly extensive, the supply being obtained principally from the United Kingdom. Since the outbreak of the war in 1914, however, imports have practically ceased, and in 1917–18 and 1920–21 fairly large quantities were exported to South Africa and Japan. Details of imports and exports for the years 1924–25 to 1928–29 are given hereunder :—

MALT.—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1924-25	43	29	3,228	1,698	3,185	1,669
1925-26	325	182	1,830	971	1,505	789
1926-27	688	197	2,285	1,340	1,597	1,143
1927-28	365	119	3,593	1,498	3,228	1,379
1928-29	508	186	4,958	1,897	4,450	1,711

7. Value of Barley Crop.—The estimated value of the barley crop for the several States of Australia for the season 1928-29 and the value per acre are shown in the following table :—

BARLEY.—VALUE OF CROP(a), 1928-29.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
Total value..	£15,940	£294,950	£26,645	£855,775	£33,383	£18,900	£59	£1,245,652
Value per acre	£3/6/11	£3/18/2	£3/9/7	£3/9/2	£2/6/3	£4/1/11	£2/19/0	£3/10/3

(a) Exclusive of the value of straw.

§ 8. Rice.

The success attending the efforts of rice growers on the Murrumbidgee Irrigation Area has proved that rice can be grown profitably on the settlement. Experimental rice cultivation has been carried on at the Yanco Experimental Farm for some years, but it was not until 1924-25 that an attempt was made to grow the cereal on a commercial basis. In that year 153 acres were cropped for a yield of 16,240 bushels. Consignments of "paddy" rice were forwarded to Sydney and Melbourne for the necessary treatment before marketing, and the results showed that the quality was much superior to the imported article. In 1925-26, 1,556 acres were reaped for 61,098 bushels, or an average yield of 39.27 bushels per acre. In 1926-27 the area was increased to 3,958 acres, from which 214,740 bushels were reaped for an average of 54.25 bushels per acre. Returns for 1927-28 showed that 9,901 acres were harvested for 879,113 bushels, averaging 88.88 bushels per acre, while in 1928-29 14,058 acres yielded 1,307,641 bushels, averaging 93.02 bushels per acre. Queensland returned 3 acres with a production of 121 bushels, Western Australia 8 acres, and the Northern Territory 20 acres. This production represents about 24,518 tons and is more than sufficient to meet local requirements, which during the past five years averaged approximately 17,000 tons per annum. The imports of rice during 1928-29 amounted to 89,062 cwt., as compared with 195,671 cwt. for the previous year, while exports, which commenced with 108 cwt. in 1927-28, increased to 2,719 cwt. during the year under review. It is estimated that the production for the season 1929-30 will amount to 35,600 tons, grown on 19,930 acres. According to the Irrigation Commission there are about 53,000 acres of land on the settlement suitable for rice-growing, and it is estimated that at least 40,000 acres could be so used, of which probably 20,000 acres would be under fallow each year and 20,000 under crop. Over-production should not present undue difficulties, as there is a ready market in the East, as well as in England and Germany. The United States of America first grew rice commercially in 1912, and having met her own requirements is now exporting to European countries and to Japan. The Commonwealth Government has protected the new industry by the imposition of a Customs duty of 8s. 4d. per cental on uncleaned rice and 12s. 6d. per cental on other than uncleaned.

§ 9. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the principal other grain and pulse crops grown in Australia are beans, peas, and rye. The total area under the two former crops for the season 1928-29 was 48,234 acres, giving a yield of 662,937 bushels, or an average of 13.74 bushels per acre, being below the average yield for the decennium ended 1928-29, which was 15.58 bushels per acre. The States in which the greatest area is devoted to beans and peas are Tasmania, South Australia and Victoria. The total area under rye in Australia during the season 1928-29 was 4,899 acres, yielding 73,675 bushels, giving an average of 15.04 bushels per acre. This was higher than the average for the past ten seasons, which was 12.80 bushels per acre. Over 72 per cent. of the rye grown during the season was produced in New South Wales, and 15 per cent. in Victoria.

§ 10. Potatoes.

1. Progress of Cultivation.—(i) *Area and Yield.* The principal potato-growing State is Victoria, which possesses peculiar advantages for the growth of this tuber. The rainfall is generally satisfactory, while the atmosphere is sufficiently dry to be unfavourable to the spread of Irish blight, consequently potatoes are grown in nearly every district except in the wheat belt. Tasmania comes next in order of importance, followed by New South Wales.

The area and production of potatoes in each State during the last five years are given hereunder :—

POTATOES.—AREA AND YIELD, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25 ..	23,384	61,295	9,493	3,292	5,122	36,171	19	138,776
1925-26 ..	22,723	63,369	10,478	2,895	4,262	33,190	8	136,925
1926-27 ..	21,906	66,185	8,642	3,549	5,144	33,984	35	139,445
1927-28 ..	21,578	77,649	10,035	4,309	5,280	44,359	21	163,231
1928-29 ..	14,830	68,412	8,154	4,518	4,819	37,299	16	138,068
YIELD.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924-25 ..	57,179	139,043	20,314	12,226	19,891	83,377	95	332,125
1925-26 ..	43,081	160,729	15,386	10,764	16,052	67,341	56	313,409
1926-27 ..	53,223	162,909	9,749	15,375	17,755	114,100	65	373,176
1927-28 ..	47,397	230,348	18,914	17,749	16,746	138,837	50	470,041
1928-29 ..	26,339	140,158	9,687	13,859	18,774	75,222	11	284,050

(a) Includes Northern Territory, 20 acres.

The cultivation of potatoes in Australia during the last five years was fairly uniform, except in 1927-28, when the area was increased by nearly 24,000 acres, chiefly owing to larger planting in Victoria and Tasmania. For the year 1928-29 the yield was the lowest recorded for the quinquennium. The average yield during the last ten years was 360,407 tons, compared with 359,299 tons during the previous decade. The record production of 507,153 tons was obtained in 1906-7.

(ii) *Average Yield.* The suitability of the soil, climate, and general conditions for potato growing is evidenced by the satisfactory yields per acre which are generally obtained in Australia, the average yield during the past ten seasons being 2.59 tons per acre. The lowest yield was shown by Queensland with an average of 1.65 tons for the same period.

Particulars for each State for the seasons 1924-25 to 1928-29, and for the past decennium, are given hereunder :—

POTATOES.—YIELD PER ACRE, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924-25	2.45	2.37	2.14	3.71	3.88	2.31	5.00	2.39
1925-26	1.90	2.54	1.47	3.72	3.77	2.03	7.00	2.29
1926-27	2.43	2.46	1.13	4.33	3.45	3.36	1.86	2.68
1927-28	2.40	2.97	1.88	4.12	3.17	3.13	2.38	2.88
1928-29	1.78	2.05	1.19	3.07	3.90	2.02	0.69	2.06
Averages for 10 seasons 1919-29	2.19	2.68	1.65	3.56	3.65	2.66	3.17	2.59

The comparatively low yield per acre as compared with many European countries where the return is double that of Australia is due in large measure to the neglect of rotation, and the insufficient use of manures.

(iii) *Relation to Population.* The average annual production of potatoes per head of the population of Australia for the past five seasons was approximately 130 lb. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was nearly a ton, while for the past five seasons it has averaged almost 9 cwt. Details for all States for the seasons 1924-25 to 1928-29 are as follows :—

POTATOES.—PRODUCTION PER 1,000 OF POPULATION, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924-25	25	84	24	23	55	383	32	57
1925-26	19	95	18	20	43	310	14	52
1926-27	23	95	11	27	47	531	13	61
1927-28	20	132	21	31	43	643	9	75
1928-29	11	80	11	24	46	347	1	45

2. *Imports and Exports.*—Under normal conditions there is a moderate export trade in potatoes carried on by Australia principally with the Pacific Islands and Papua. On the other hand, when the recurrence of droughts causes a shortage in any of the

States, importations are usually made from New Zealand. The quantities and values of the Australian oversea imports and exports of potatoes during the past five years are shown in the following table :—

POTATOES.—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1924-25	71	877	5,832	30,283	5,761	29,406
1925-26	8,168	77,056	1,017	16,674	— 7,151	— 60,382
1926-27	14,491	125,188	1,158	14,950	— 13,333	— 110,238
1927-28	218	1,831	2,132	16,619	1,914	14,788
1928-29	4	82	1,766	19,948	1,762	19,866

NOTE.—The minus sign (—) signifies net imports.

3. Value of Potato Crop.—The estimated value of the potato crop of each State for the season 1928-29 is given in the following table, together with the value per acre :—

POTATOES.—VALUE OF CROP, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Total value ..	421,580	1,520,714	106,509	129,582	288,768	1,026,100	158	3,493,471(a)
Value per acre	£28/8/7	£22/4/7	£13/1/3	£28/13/8	£59/9/2	£27/10/2	£9/17/6	£25/6/0

(a) Includes £60, Northern Territory.

§ 11. Other Root and Tuber Crops.

1. Nature and Extent.—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1928-29 being only 21,229 acres. The principal crops comprised are onions, mangolds, sugar beet, turnips, and "sweet potatoes." Of these, onions, sugar beet and mangolds are most largely grown in Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in Australia during the season 1928-29 was 8,550 acres, giving a yield of 34,484 tons, and averaging 4.03 tons per acre. The area devoted in 1928-29 to root crops other than potatoes and onions, viz., 12,679 acres, yielded 77,343 tons, and gave an average of 6.10 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," reference to which is made further on.

2. Imports and Exports.—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by Australia is that of onions. During the past five years 9,759 tons, valued at £113,560, were imported, principally from Japan, the United States of America, and New Zealand, while during the same period the exports totalled 15,226 tons, valued at £163,392, and were shipped mainly to New Zealand, the Pacific Islands, the Philippine Islands, and Canada.

§ 12. Hay.

1. *Nature and Extent.*—(i) *Area and Yield.* As already stated, the chief crop in Australia is wheat grown for grain. Next in importance is hay, which for the season 1928–29 averaged nearly 13 per cent. of the total area cropped. In most European countries the hay consists almost entirely of meadow and other grasses, but in Australia a very large proportion is composed of wheat and oats. Large quantities of lucerne hay are also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States during the last five years is given hereunder. The progress from 1860 onwards may be traced from the graph accompanying this chapter.

HAY.—AREA AND YIELD, 1924–25 TO 1928–29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	Fed. Cap. Ter.	Australia.
AREA.									
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924–25	762,242	1,120,312	95,007	562,253	397,591	87,945	10	1,045	3,026,405
1925–26	749,192	1,013,613	66,828	517,220	391,142	92,595	..	1,413	2,832,003
1926–27	623,424	1,080,993	40,141	496,105	358,487	98,289	..	2,192	2,699,631
1927–28	680,919	908,804	65,412	532,568	357,065	85,769	..	1,682	2,632,219
1928–29	684,730	1,005,063	55,498	497,538	414,866	80,190	..	788	2,738,673
YIELD.									
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924–25	1,151,238	1,492,588	136,804	716,749	448,525	121,110	30	1,375	4,068,419
1925–26	564,006	929,068	99,742	612,671	355,269	114,920	..	2,269	2,677,945
1926–27	875,227	1,387,971	47,740	598,835	423,839	151,200	..	2,540	3,487,352
1927–28	754,176	1,001,251	94,996	464,905	416,707	124,924	..	2,004	2,858,963
1928–29	793,255	1,267,437	85,651	486,993	421,504	119,427	..	971	3,175,238

In all the States marked fluctuations occur yearly in the area under hay. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus, crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for grain is not satisfactory. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in Australia during the season 1915–16, i.e., 3,597,771 acres, was the highest on record, whilst the average during the past decennium amounted to 3,002,697 acres.

(ii) *Average Yield.* The States in which the highest average yields per acre have been obtained during the last decennium are Tasmania, Queensland and Victoria, in the former two of which States also the smallest areas are devoted to this crop. For the same period the lowest yield for Australia as a whole was that of 19 cwt. per acre in 1925–26, while the highest was that of 29 cwt. in 1920–21, followed closely by 27 cwt.

obtained in 1924-25. The average for the decennium was 24 cwt. Particulars for the several States for the seasons 1924-25 to 1928-29, and the average for the last ten years are given hereunder :—

HAY.—YIELD PER ACRE, 1924-25 TO 1928-29.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Aus-tralia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924-25	1.51	1.33	1.44	1.27	1.13	1.38	3.00	1.32	1.34
1925-26	0.75	0.92	1.49	1.18	0.91	1.24	..	1.60	1.05
1926-27	1.40	1.28	1.19	1.21	1.18	1.54	..	1.16	1.29
1927-28	1.11	1.10	1.45	0.87	1.17	1.46	..	1.19	1.09
1928-29	1.16	1.26	1.54	0.98	1.02	1.49	..	1.23	1.16
Average for 10 seasons 1919-1929 ..	1.21	1.25	1.32	1.16	1.08	1.47	3.88	1.32	1.21

(iii) *Relation to Population.* During the past five seasons the Australian hay production per head of population has varied between 9 cwt. in 1927-28 and 14 cwt. in 1924-25, averaging about 11 cwt. per head for the period. Details for the seasons 1924-25 to 1928-29 are given hereunder :—

HAY.—YIELD PER 1,000 OF POPULATION, 1924-25 TO 1928-29.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Aus-tralia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924-25 ..	511	901	163	1,331	1,231	556	8	459	693
1925-26 ..	245	552	116	1,111	955	530	..	576	497
1926-27 ..	373	811	54	1,057	1,119	714	..	516	571
1927-28 ..	314	575	102	807	1,062	578	..	349	459
1928-29 ..	324	720	93	841	1,038	550	..	121	501

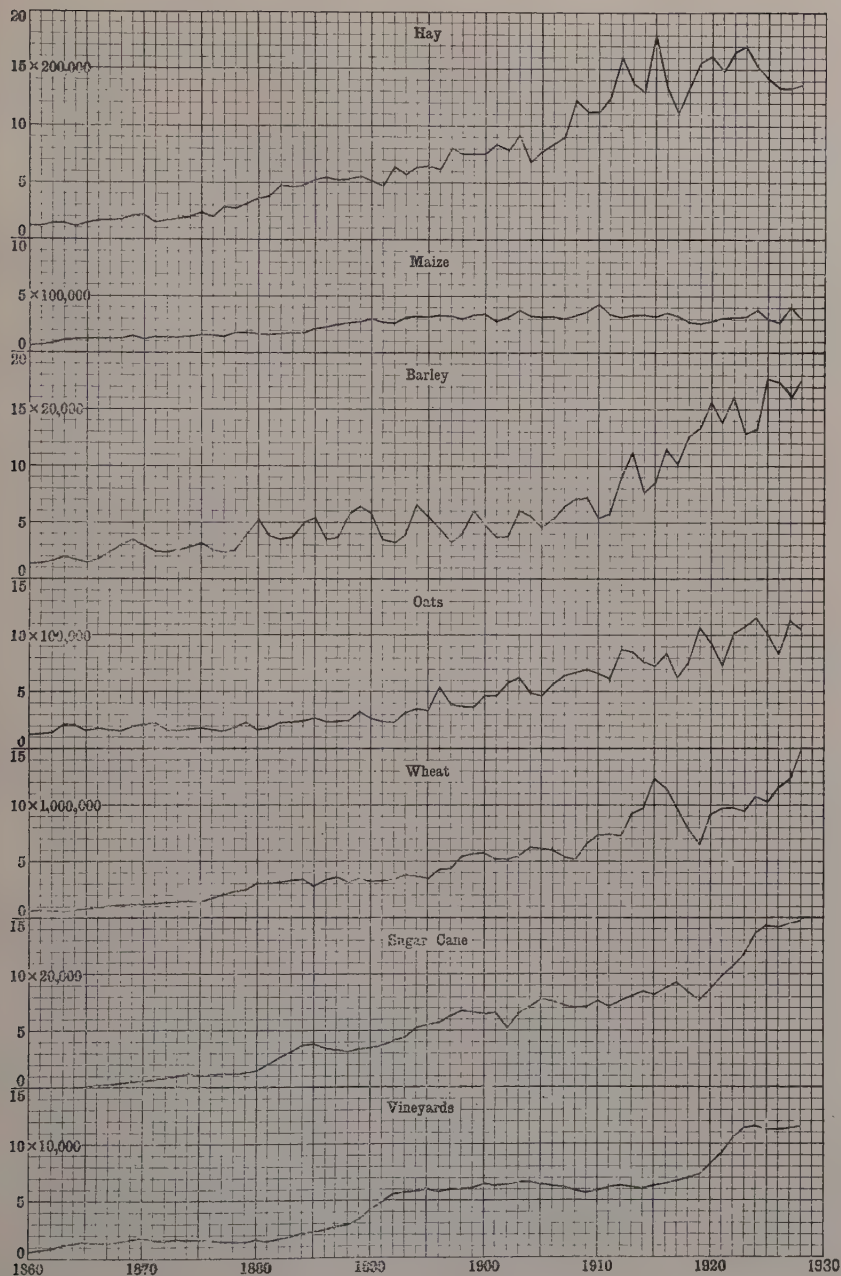
(iv) *Varieties Grown.* Particulars concerning the kinds of crop cut for hay are furnished in the returns prepared by five of the States. In the case of Tasmania the bulk consists of oaten hay; full particulars, however, are not available for that State.

Details for the past five seasons are given in the following table :—

HAY.—VARIETIES GROWN, 1924-25 TO 1928-29.

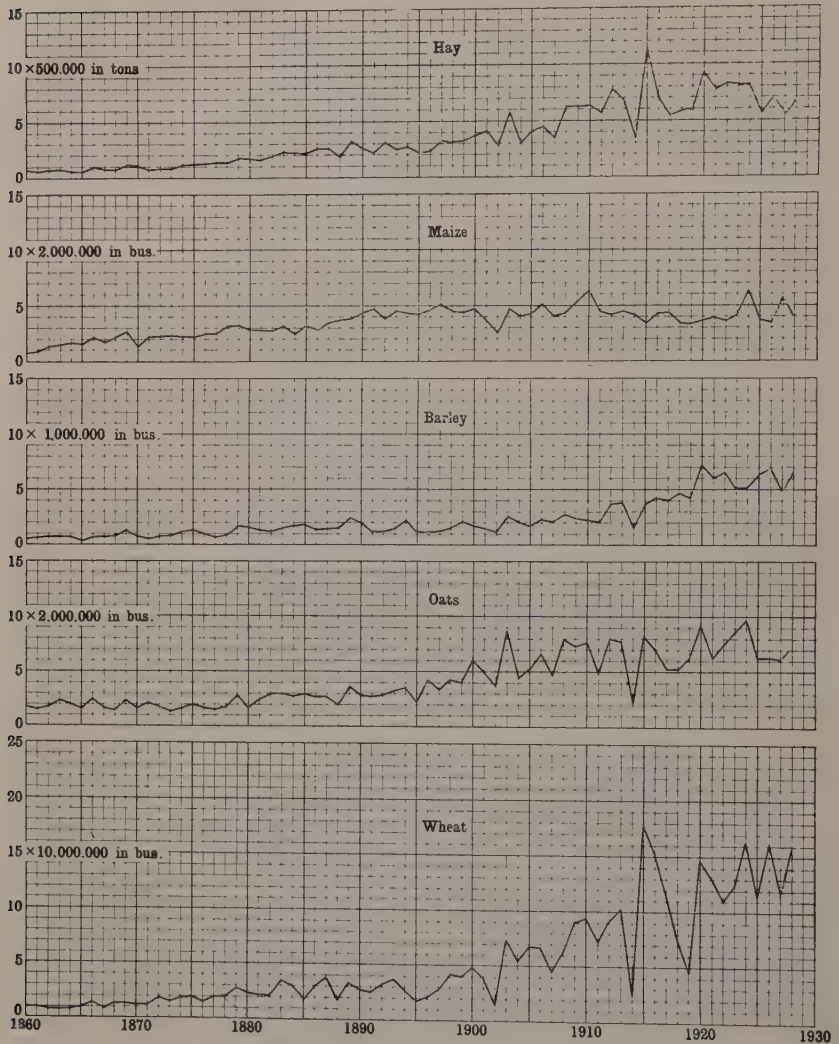
Varieties.	1924-25.	1925-26.	1926-27.	1927-29.	1928-29.
	Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—					
Wheaten	388,422	449,653	311,073	369,960	375,270
Oaten	274,408	209,047	216,403	200,872	214,137
Barley	1,150	781	692	615	817
Lucerne	97,994	89,368	95,003	109,194	94,275
Other	268	343	253	278	231
Total	762,242	749,192	623,424	680,919	684,730

AREA UNDER PRINCIPAL CROPS—AUSTRALIA, 1860 TO 1929.



EXPLANATION.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left of the graph. The height of each curve above its base line denotes, for the crop to which it relates, the total area under cultivation in Australia during the successive seasons.

PRODUCTION OF PRINCIPAL CROPS—AUSTRALIA, 1860 TO 1929.



EXPLANATION.—A separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of wheat, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 1,000,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each curve above its base line denotes the aggregate yield in Australia of the particular crop during the successive seasons.

HAY.—VARIETIES GROWN, 1924-25 TO 1928-29.—*continued.*

Varieties.			1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
			Acres.	Acres.	Acres.	Acres.	Acres.
VICTORIA—							
Wheaten	..	..	87,312	230,364	101,243	224,454	135,718
Oaten	..	..	1,000,382	759,209	959,019	659,983	845,731
Lucerne, etc.	..	..	32,618	24,040	20,731	24,367	23,614
Total			1,120,312	1,013,613	1,080,993	908,804	1,005,063
QUEENSLAND—							
Wheaten	..	..	9,457	10,514	2,798	3,637	4,585
Oaten	..	..	8,304	2,214	790	2,468	2,192
Lucerne	..	..	61,089	50,526	33,263	48,346	45,476
Other	..	..	16,157	3,574	3,290	10,961	3,245
Total			95,007	66,828	40,141	65,412	55,498
SOUTH AUSTRALIA—							
Wheaten	..	..	304,183	273,300	230,120	289,219	270,805
Oaten	..	..	246,825	234,923	256,417	233,709	218,140
Lucerne	..	..	8,344	6,218	5,613	5,649	4,833
Other	..	..	2,901	2,779	3,955	3,991	3,760
Total			562,253	517,220	496,105	532,568	497,538
WESTERN AUSTRALIA—							
Wheaten	..	..	242,216	238,110	207,841	223,827	250,786
Oaten	..	..	153,315	150,534	148,150	130,109	160,675
Lucerne	..	..	339	368	340	120	184
Other	..	..	1,721	2,130	2,156	3,009	3,221
Total			397,591	391,142	358,487	357,065	414,866

Wheaten hay is the principal hay crop in New South Wales, South Australia, and Western Australia, oaten hay in Victoria and Tasmania, and lucerne in Queensland.

2. *Comparison with Other Countries.*—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy prominent places. The statistics of hay production in these countries are not prepared on a uniform basis, consequently any attempt to furnish extensive comparisons would be misleading. It may be noted, however, that in Great Britain the production of hay from clover, sainfoin, etc., for the year 1929 amounted to 2,429,000 tons from 1,932,075 acres, while from permanent grasses a yield of 3,857,000 tons of hay was obtained from 4,863,731 acres, giving a total of 6,286,000 tons from 6,795,806 acres, or about 18 cwt. per acre.

3. *Imports and Exports.*—Under normal conditions, hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of Australia. During 1928-29, 375 tons were imported, while the exports amounted to 2,758 tons, valued at £19,073, the principal purchases being made by India, the Philippine Islands, Malaya (British), Ceylon, and Hong Kong.

4. Value of Hay Crop.—The following table shows the value and the value per acre of the hay crop of the several States for the season 1928-29:—

HAY.—VALUE OF CROP, 1928-29.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Total Value ..	5,321,310	4,752,888	453,204	2,069,720	1,013,996	519,260	6,553	14,137,431
Value per acre ..	£7/15/5	£4/14/7	£8/3/4	£4/3/2	£2/8/11	£6/9/6	£8/6/4	£5/3/3

§ 13. Green Forage.

1. Nature and Extent.—(i) *Area*. In all the States a considerable area is devoted to the production of green forage, mainly in connexion with the dairying industry. The total area so cropped is considerably swollen in adverse seasons by the inclusion of wheat or other cereal crops deemed unsuitable for the production of either grain or hay. Under normal conditions the principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States during each of the last five years are given in the following table:—

GREEN FORAGE.—AREA, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25	166,030	99,531	134,109	73,023	78,586	13,602	..	43	564,924
1925-26	479,434	107,873	247,482	102,732	100,558	17,101	..	30	1,055,210
1926-27	217,385	87,241	342,580	105,170	109,314	19,213	..	54	880,957
1927-28	848,042	94,895	155,843	184,782	82,241	23,409	..	8	1,389,220
1928-29	264,699	107,351	180,524	155,460	125,311	25,402	..	837	859,584

(ii) *Relation to Population*. Particulars of the area under green forage per 1,000 of the population for the seasons 1924-25 to 1928-29 are given hereunder:—

GREEN FORAGE.—AREA PER 1,000 OF POPULATION, 1924-25 TO 1928-29.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25 ..	74	60	161	136	216	62	..	14	96
1925-26 ..	209	64	287	186	270	79	..	8	176
1926-27 ..	93	51	388	186	289	89	..	11	144
1927-28 ..	353	54	173	321	210	108	..	1	223
1928-29 ..	108	61	197	268	309	117	..	104	136

2. Value of Green Forage Crops.—The value of these crops is variously estimated in the several States, and the Australian total for the season 1928-29 may be taken approximately as £2,680,230 or about £3 2s. 4d. per acre.

§ 14. Sugar-cane and Sugar-beet.

1. Sugar-cane.—(i) *Area*. Sugar-cane for sugar-making purposes is grown only in Queensland and New South Wales, and much more extensively in the former than in the latter State. Thus, of a total area of 299,314 acres under sugar-cane in Australia for the season 1928-29, there were 283,476 acres, or about 94½ per cent., in Queensland. Sugar-cane growing appears to have been started in Australia in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of 20 acres for the season 1862-63. In the following season the New South Wales returns show an area of 2 acres under this crop. The area under cane in New South Wales reached its maximum in 1895-96 with a total of 32,927 acres. Thenceforward

with slight variations it gradually fell to 10,490 acres in 1918-19, but from that year it expanded until 1924-25, when about 20,000 acres were planted. Later, however, the area declined, and in 1928-29 only 15,838 acres were under cultivation. In Queensland, although fluctuations in area are manifest, the general trend has been upwards, the acreage under cane for the season 1928-29 being the highest on record. The area under sugar-cane in Australia from 1924-25 is given in the following table, and particulars for earlier years may be seen from the accompanying graphs.

SUGAR-CANE.—AREA, 1924-25 TO 1928-29.

Season.	New South Wales.		Queensland.		Australia.		
	Productive.	Unproductive.	Productive.	Unproductive.	Productive.	Unproductive.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25 ..	7,761	12,232	167,649	85,870	175,410	98,102	273,512
1925-26 ..	8,688	10,675	189,675	79,834	198,363	90,509	288,872
1926-27 ..	10,128	8,181	189,312	77,207	199,440	85,388	284,828
1927-28 ..	8,556	7,905	203,748	71,090	212,304	78,995	291,299
1928-29 ..	6,783	9,055	215,674	67,802	222,457	76,857	299,314

(ii) *Productive and Unproductive Cane.* The areas given in the preceding table do not include the small acreage cut for green forage. The whole area was not necessarily cut for crushing during any one season, there being always a considerable amount of young and "stand over" cane, as well as a small quantity required for plants. The season in which the highest acreage is recorded may not show the greatest area of productive cane cut for crushing, as was evidenced in 1923-24, when, although the total acreage was greater, the area cut was less than in the previous year.

(iii) *Yield of Cane and Sugar.* Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897-98. In that season the total for Australia was 1,073,883 tons, as against the maximum production of 3,965,587 tons in 1925-26. The average production of cane during the decennium ended 1928-29 was 2,907,762 tons. The three highest yields of sugar were in 1928-29, 1925-26, and 1927-28, the quantities being 537,574 tons, 517,970 tons, and 509,094 tons respectively. The decennial average was 365,571 tons of sugar. Particulars relative to the total yields of cane sugar for the past five years are as follows :—

SUGAR-CANE.—YIELD OF CANE AND SUGAR, 1924-25 TO 1928-29.

Season.	New South Wales.		Queensland.		Australia.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924-25 ..	228,978	26,682	3,171,341	409,136	3,400,319	435,818
1925-26 ..	297,335	32,385	3,668,252	485,585	3,965,587	517,970
1926-27 ..	230,254	26,604	2,925,662	339,272	3,155,916	415,876
1927-28 ..	208,612	23,349	3,555,827	485,745	3,764,439	509,094
1928-29 ..	147,414	16,954	3,736,311	520,620	3,883,725	537,574

The production of raw sugar in Australia in 1928-29 amounted to 537,574 tons manufactured from 3,883,725 tons of cane. These figures show considerable improvement on the returns for the previous year, while the production for Queensland was the greatest yet recorded for that State. New South Wales, however, shows a fall of over 6,000 tons compared with the previous year. The assistance given by the Commonwealth and State Governments during recent years has greatly benefited the sugar industry. In 1920-21 the area cultivated in Queensland was 162,619 acres and the number of cane farmers was 3,930, whereas in 1928-29, 283,476 acres were under cultivation and the number of growers of 5 acres and over had risen to 6,502, or an increase of 2,572 in the eight years.

Final figures for the 1929-30 season are not yet available, but it is anticipated from the data available that the production of raw sugar will amount to 538,090 tons from 3,755,375 tons of cane crushed.

Early indications pointed to a good crop in 1930-31, but later advices report various climatic drawbacks, and it is now believed that the yield will be slightly below that of the previous year, and will probably not exceed 499,000 tons of raw sugar.

(iv) *Average Yield of Cane and Sugar.* The average yield per acre of productive cane is much higher in New South Wales than in Queensland, the average during the last decade being 25.56 tons for the former and 17.68 for the latter State. For some years prior to 1910-11, the yield in New South Wales remained practically constant at about 21 tons per acre. Since that year, the average yield per acre has shown an upward tendency, reaching 30 tons or over during 1913-14, 1914-15, 1917-18, and 1925-26. The climatic conditions affecting the long coastal area where this industry is situated in Queensland are largely responsible for the great variations in the yields of sugar for that State, the figures ranging during the past decennium from 14.75 tons per acre in 1923-24 to 19.34 tons in 1925-26.

The greatest production of sugar per acre crushed during the past decennium occurred in 1925-26, when 2.61 tons were obtained, the respective crushings for New South Wales and Queensland averaging 3.73 and 2.56 tons. The average yield per acre for the past ten years was 2.92 tons in New South Wales, and 2.23 tons in Queensland.

(v) *Quality of Cane.* The quantity of cane required to produce a ton of sugar varies with the variety sown, the district where grown, also with the season, and for the decennium ended 1928-29 averaged 7.96 tons, the average production of sugar being 12.56 per cent. of the weight of cane crushed. As the result of the systematic study of cane culture in Queensland, the sugar contents of the cane have been considerably increased in recent years. During the ten years ended 1918-19 it required on the average 8.68 tons of cane to produce 1 ton of sugar, whereas the average figure for the past decennium was reduced to 7.96 tons.

SUGAR-CANE AND SUGAR.—YIELD PER ACRE, 1924-25 TO 1928-29.

Season.	New South Wales.			Queensland.			Australia.		
	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924-25	29.50	3.44	8.58	18.92	2.44	7.75	19.38	2.48	7.80
1925-26	34.22	3.73	9.18	19.34	2.56	7.55	19.99	2.61	7.66
1926-27	22.73	2.63	8.65	15.45	2.06	7.52	15.82	2.09	7.59
1927-28	24.38	2.73	8.93	17.45	2.38	7.32	17.73	2.40	7.39
1928-29	21.73	2.50	8.69	17.32	2.41	7.18	17.46	2.42	7.22
Average 10 seasons 1919-29	25.56	2.92	8.76	17.68	2.23	7.91	18.03	2.27	7.96

The Bureau of Sugar Experiment Stations established in Queensland is rendering useful service to the sugar industry in that State, by advocating and demonstrating better methods of cultivation, the use of green manures, limes, and fertilizers, together with the introduction and distribution of improved varieties of sugar cane. During the year 1929 a re-organization of the Bureau was effected, and it now comprises four divisions, i.e., Soils and Agriculture, Pathology, Entomology, and Sugar Mill Technology. Further experiments were conducted in connexion with cane cutting by machine, and results are regarded as satisfactory.

(vi) *Relation to Population.* The yield of sugar in Australia during the five years 1924-25 to 1928-29 was more than sufficient to supply local requirements, the average production during the period amounting to 177 lb. per head of population, while the consumption was estimated to average 118 lb. per head. Details for the period 1924-25 to 1928-29 are as follows:—

SUGAR.—PRODUCTION PER HEAD OF POPULATION, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	lb.	lb.	lb.	lb.	lb.
New South Wales	27	32	25	22	16
Queensland	1,098	1,263	988	1,210	1,272
Australia	166	194	152	183	190

2. **Sugar-beet.**—(i) *Area and Yield.* The following table shows the acreage under sugar-beet, and the production in Victoria during the past five seasons :—

SUGAR-BEET.—AREA AND PRODUCTION IN VICTORIA, 1924-25 TO 1928-29.

Particulars.		1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Area harvested ..	acres	1,897	1,880	2,024	2,353	2,130
Production ..	tons	24,468	21,194	9,851	25,438	15,237
Average per acre ..	"	12.90	11.27	4.87	10.81	7.15
Sugar produced ..	"	3,017	2,315	1,177	2,352	2,096

Seasonal conditions were not so favourable during 1928-29, and the yield declined to 15,000 tons in that year. The sugar content, however, was exceptionally high, and to some extent counterbalanced the reduced yield. The average per acre was 7.15 tons, while the average for the ten years ending 1929 was 10.09 tons.

(ii) *Encouragement of Beet-growing.* During recent years an effort has been made to expand the sugar-beet industry in Victoria. The State Government has advanced its irrigation scheme on the Macalister River to provide water for the district, and it is hoped that the industry will be greatly assisted thereby. A fine grade of white sugar is manufactured at Mafra, and considerable quantities of beet pulp and molasses are distributed for stock feed.

3. **Sugar Bounties.**—The provision of bounties or similar aids to the sugar growers of Australia early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry, and at the same time diminishing the employment of coloured labour in connexion therewith. An account of the various Acts in connexion with sugar bounties and sugar excise tariffs will be found on pages 394 to 396 of Year Book No. 6. In 1912 the Sugar Excise Repeal Act and the Sugar Bounty Abolition Act were passed by the Federal Parliament, conditionally on the Queensland Parliament approving of legislation prohibiting the employment of coloured labour in connexion with the industry. The State Sugar Cultivation Act, the Sugar Growers Act, and the Sugar Growers' Employees Act of 1913 having been approved of, the 1912 Federal Acts, which repeal all previous enactments in regard to excise on sugar and bounty on cane, came into force by proclamation in July, 1913.

4. **Sugar Purchase by Commonwealth Government.**—The steps taken by the Commonwealth Government in connexion with this matter were alluded to in previous issues of the Year Book. (See No. 18, p. 720.)

5. **Sugar Agreement—Embargo on Imports, etc.**—By agreement between the Commonwealth and Queensland Governments in 1925, it was arranged that the embargo on the importation of foreign sugar should be extended for three years from 1st September, 1925. The price payable for the raw sugar needed for home consumption was fixed at £27 per ton, less £1 per ton to defray administrative and general expenses of the Sugar Board, and to provide special concessions to certain consumers of sugar, while for that portion reserved for export, the price was fixed at a much lower figure, the latter of course being subject to realization adjustments. The embargo was later extended for a further period of three years until 1st August, 1931, on practically the same terms as heretofore. In response to representations, the Commonwealth Government appointed a Committee of Inquiry on the 23rd August, 1930, to report on the sugar industry in Australia. The Committee consists of eight members, representing the various interests concerned. The terms of reference are of a comprehensive nature, and include such important items as costs of production, manufacture, and distribution, terms of the existing agreement and any variations thereof considered desirable, efficiency in field and factory, prices at home and abroad, etc.

6. **Net Return for Sugar Crop.**—Final calculations by the Sugar Board showed that 56 per cent. of the total production in 1925-26 was consumed in Australia, while the net value per ton of exported sugar was £11 5s. 9d., making the average price for the whole crop £19 10s. 7d. per ton.

Owing to the reduced production in the 1926-27 season 81½ per cent. was delivered for home consumption, and the net value of the surplus exported was £14 18s. 10d. per ton, making an average return of £24 10s. 10d. per ton.

In 1927-28 the percentage of the sugar crop retained for consumption was 68.82, the net value of the exportable surplus was £1,913,280, or £12 2s. 6d. per ton, and the average net return for the whole crop was £22 0s. 4d. per ton.

With the record yield of 1928-29 the quantity required for home consumption was 64.3 per cent. of the total production, which left a greater proportion available for export when compared with the previous year. Consequently the average price returned for the whole crop was lower, realizing £20 17s. 11d. per ton, while the net value of the surplus exported amounted to £10 10s. per ton.

7. Imports and Exports of Sugar.—Owing to the embargo and the increased production of sugar in Australia, the imports have dwindled to insignificant proportions. Supplies to make up for local deficiencies are usually drawn from Java and Fiji. Particulars concerning the imports and exports of cane sugar for the past five years are as follows:—

CANE SUGAR.—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1924-25	3,046	65,579	82,747	2,162,309	79,701	2,096,730
1925-26	345	9,425	208,805	5,313,135	208,460	5,303,710
1926-27	3,611	47,844	66,523	1,730,095	62,912	1,682,251
1927-28	20	457	154,654	4,020,095	154,634	4,019,638
1928-29	11	241	199,497	5,223,348	199,486	5,223,107

8. Sugar By-products.—Large quantities of molasses are produced as a by-product in the sugar mills. Details for a series of years of the quantity produced and the proportions used for distilling, fuel, manure and other purposes will be found in Chapter XXII. —“Manufacturing.” A distillation plant erected at the Plane Creek Central Sugar Mill, Mackay, was opened during 1927 and produces power alcohol of a very fine quality.

Proposals have been under consideration in regard to the establishment of an industry to undertake the manufacture of a building material known as “megass board” from megass or bagasse, i.e., the residuum of crushed fibre after the removal of the sugar content from the sugar cane. The possibility of the manufacture of artificial silk from the same material has also been considered.

9. Sugar Prices.—The prices of sugar in Australia from 1915 to 1931 are shown in the table below. During recent years the prices were fixed in accordance with the agreement referred to previously.

AUSTRALIAN SUGAR PRICES, 1915 TO 1931.

Date of Determination.	Raw Sugar.	Refined Sugar.	
	Price to Grower and Miller per Ton.	Wholesale Price per Ton.	Retail Price per lb.
	£ s. d.	£ s. d.	d.
19.7.15 to 15.1.16	18 0 0	25 10 0	3
16.1.16 to 30.6.17	18 0 0	29 5 0	3½
1.7.17 to 24.3.20	21 0 0	29 5 0	3½
25.3.20 to 30.6.20	21 0 0	49 0 0	6
1.7.20 to 31.10.22	30 6 8	49 0 0	6
1.11.22 to 30.6.23	30 6 8	42 0 0	5
1.7.23 to 21.10.23	27 0 0	42 0 0	5
22.10.23 to 31.8.25	26 0 0	37 11 4	4½
1.9.25 to 31.8.31	(a) 26 10 0	37 6 8	4½

(a) The price of raw sugar for the years 1925 to 1931 is estimated at £26 10s. per ton, but, as the result of the values received for the surpluses exported, the actual price obtained in 1925-26 was £19 10s. 7d.; in 1926-27, £24 10s. 10d.; in 1927-28, £22 0s. 4d.; in 1928-29, £20 17s. 11d.; and in 1929-30, £20 8s. 2d.

§ 15. Vineyards.

1. *Progress of Cultivation.*—(i) *Area of Vineyards.* The date of introduction of the vine into Australia has been variously set down by different investigators, the years 1815 and 1828 being principally favoured. It would seem, however, that plants were brought out with the first fleet in 1788, consequently the Australian vine is as old as Australian settlement. As already mentioned, a report by Governor Hunter gives the area under vines in 1797 as 8 acres. From New South Wales the cultivation spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area under this crop. In Queensland and Western Australia also, vine-growing has been carried on for many years, but little progress has been made. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz.:—(a) for wine-making, (b) for table use, and (c) for drying. The total area under vines in the several States during each of the last five years is given in the following table, while particulars from 1860 onwards may be gathered from the graph accompanying this chapter.

VINEYARDS.—AREA, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25..	14,737	42,467	1,579	50,280	5,331	There are no vineyards in Tasmania.	114,394
1925-26..	14,465	40,712	1,656	50,594	5,270		112,697
1926-27..	14,281	40,612	1,682	50,271	5,274		112,120
1927-28..	14,880	40,988	1,762	50,663	4,959		113,252
1928-29..	15,200	41,565	1,787	51,802	4,943		115,297

The area under vines in Australia amounted to 65,673 acres in 1904-5. From that year onwards a gradual decline set in, and at the end of 1914-15 the acreage had decreased to 60,985. Since that date, however, as a result of extensive plantings, particularly of the dried grape varieties, the 1904-5 figure was soon exceeded, and the area for 1928-29 is the highest on record.

The wine-growing industry in Australia, especially in Victoria and New South Wales, received a severe check by various outbreaks of phylloxera. With a view to the eradication of this disease extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resistant stocks, was prohibited.

(ii) *Wine Production.* The production of wine has not increased as rapidly as the suitability of soil and climate would appear to warrant. The cause is probably twofold, being due in the first place to the fact that Australians are not a wine-drinking people, and consequently do not provide a local market for the product, and in the second, to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Continued efforts are made to bring the Australian wines under notice, while the Commonwealth bounty on the export of fortified wine of specified strength has greatly benefited the industry. The bounty was increased to 1s. 9d. per gallon from 13th March, 1930, under the *Wine Export Bounty Act 1930*, which provides that this rate will be paid until the 28th February, 1935.

Particulars of the quantity of wine produced in the several States during the past five seasons are given in the table hereunder :—

WINE.—PRODUCTION, 1924-25 TO 1928-29.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No production of wine in Tasmania.	Gallons.
1924-25 ..	1,171,264	1,368,765	33,119	10,502,381	223,761		13,299,290
1925-26 ..	1,240,893	1,637,274	39,375	13,074,874	238,726		16,231,142
1926-27 ..	1,625,507	2,346,314	32,974	16,159,595	291,951		20,456,341
1927-28 ..	2,295,030	1,739,560	38,571	12,820,733	408,717		17,302,611
1928-29 ..	1,481,846	1,942,701	37,210	14,828,968	309,524		18,600,249

(iii) *Relation to Population.* In relation to population the areas of the vineyards of the several States have varied little during the last five years, the Australian total declining slightly during the period, as the result of marketing difficulties. Details for the seasons 1924-25 to 1928-29 are given in the succeeding table :—

VINEYARDS.—AREA PER 1,000 OF POPULATION, 1924-25 TO 1928-29.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25 ..	7	26	2	93	15	..	19
1925-26 ..	6	24	2	92	14	..	19
1926-27 ..	6	24	2	89	14	..	18
1927-28 ..	6	24	2	88	13	..	18
1928-29 ..	6	24	2	89	12	..	18

2. *Imports and Exports of Wine.*—(i) *Imports.* The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Italy, the bulk of the sparkling wines coming from France. Particulars relative to the importations of wine into Australia during the past five years are given hereunder :—

WINE.—IMPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1924-25 ..	28,324	52,999	81,323	72,042	33,743	105,785
1925-26 ..	25,896	61,511	87,407	65,763	37,432	103,195
1926-27 ..	27,720	61,878	89,598	64,134	37,325	101,459
1927-28 ..	20,737	55,403	76,140	45,703	33,997	79,700
1928-29 ..	20,212	56,171	76,383	50,576	32,948	83,524

(ii) *Exports.* The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, the bulk of the shipments during the past two years being consigned to the former country. Details concerning the exports of wine from Australia during the past five years are given in the following table :—

WINE.—EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1924-25 ..	4,003	877,466	881,469	8,304	180,387	188,691
1925-26 ..	3,564	1,719,045	1,722,609	7,156	364,766	371,922
1926-27 ..	2,956	3,078,841	3,081,797	6,075	827,722	833,797
1927-28 ..	2,744	3,770,035	3,772,779	5,577	1,056,831	1,062,408
1928-29 ..	2,932	1,738,047	1,740,979	5,685	495,299	500,984

3. *Other Viticultural Products.*—(i) *Table Grapes.* Large quantities of grapes are grown in all the States for table use, but the greatest development in the industry has taken place in the drying of raisins and currants, particularly in Victoria and South Australia. The quantities of table grapes grown in the several States during the past five seasons are as follows :—

TABLE GRAPES.—PRODUCTION, 1924-25 TO 1928-29.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924-25 ..	3,590	2,672	961	1,156	2,069	..	10,448
1925-26 ..	3,837	3,616	996	1,063	2,284	..	11,796
1926-27 ..	4,689	4,634	1,410	791	2,195	..	13,719
1927-28 ..	4,250	3,338	1,474	581	2,642	..	12,285
1928-29 ..	4,278	3,909	1,535	899	2,811	..	13,432

(ii) *Raisins and Currants.* Statistics of the quantities of raisins and currants dried during each of the past five seasons are given in the following table :—

RAISINS AND CURRANTS.—QUANTITIES DRIED, 1924-25 TO 1928-29.

Season.	N.S. Wales.		Victoria.		South Aust.		Western Aust.		Australia.	
	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
1924-25 ..	19,180	5,953	366,999	104,948	139,385	109,446	7,940	12,689	533,504	233,036
1925-26 ..	23,168	6,132	351,506	123,733	111,261	103,910	9,631	10,919	495,566	244,694
1926-27 ..	41,064	9,106	657,714	135,464	162,401	87,662	8,861	22,936	870,040	255,168
1927-28 ..	30,833	4,536	402,321	73,101	55,131	50,424	16,206	24,431	504,491	152,492
1928-29 ..	60,087	9,755	771,119	189,985	210,531	164,145	12,033	26,212	1,053,770	390,097
Average 10 seasons 1919-29	22,078	5,703	379,265	106,980	103,710	96,564	8,904	13,952	513,957	223,190

4. Imports and Exports of Raisins and Currants.—The following table gives the oversea imports and exports of raisins and currants during each of the past five years :—

**RAISINS AND CURRANTS.—IMPORTS AND EXPORTS, AUSTRALIA,
1924-25 TO 1928-29.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
RAISINS.						
	lbs.	£	lbs.	£	lbs.	£
1924-25 ..	193,372	8,682	56,046,855	1,392,566	55,853,483	1,383,884
1925-26 ..	103,094	5,224	35,556,767	1,026,339	35,453,673	1,021,115
1926-27 ..	98,317	5,385	44,078,938	1,265,994	43,980,621	1,260,609
1927-28 ..	108,430	4,388	54,288,593	1,398,595	54,180,163	1,394,207
1928-29 ..	330,694	7,002	75,207,151	1,620,307	74,876,457	1,613,305
CURRANTS.						
1924-25 ..	7,852	231	21,558,804	509,179	21,550,952	508,948
1925-26 ..	15,147	494	18,844,854	402,283	18,829,707	401,789
1926-27 ..	5,202	173	19,210,967	377,895	19,205,765	377,722
1927-28 ..	209	4	8,213,729	177,605	8,213,520	177,601
1928-29 ..	805	30	29,850,697	597,917	29,849,892	597,887

The quantities of raisins and currants imported into Australia were generally greater than the exports for all years prior to 1912, when the increased production in Australia left a surplus available for export. During the last five years the value of the exports exceeded that of the imports by £8,737,067, the average annual excess for the quinquennium being £1,747,413.

§ 16. Orchards and Fruit Gardens.

1. Progress of Cultivation.—(i) *Area.* The maximum area under orchards and fruit gardens was recorded in 1921-22, when 281,149 acres were planted. Since that year the industry has declined slightly owing to difficulties experienced in disposing of the surplus production. The total area under orchards and fruit gardens in the several States is given in the following table :—

ORCHARDS AND FRUIT GARDENS.—AREA, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25 ..	73,972	85,358	31,738	33,319	18,520	33,992	5	276,904
1925-26 ..	74,532	82,665	33,520	32,276	18,355	33,891	6	275,245
1926-27 ..	74,682	83,215	35,145	31,570	18,512	33,322	5	276,451
1927-28 ..	76,999	81,397	36,206	30,983	18,393	33,834	14	277,826
1928-29 ..	76,009	79,322	38,452	30,836	18,735	34,087	35	277,476

(ii) *Varieties and Yield.* The varieties grown differ in various parts of the States, ranging from such fruits as the pineapple, paw-paw, mango, and guava of the tropics to the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, peach, pear, orange, plum, and apricot. In New South Wales citrus fruits (oranges, lemons, etc.) occupy the leading position, although apples, peaches, plums, pears, cherries and bananas are extensively grown. In Queensland, the banana, the pineapple, the apple, the orange, the peach, the plum, and the coconut are the varieties most largely cultivated. In South Australia, in addition to the apple, orange, apricot, plum, peach, and pear, the almond and the olive are extensively grown. In Western Australia, the apple, orange, pear, plum, peach, apricot and fig are the chief varieties. In Tasmania the apple occupies nearly four-fifths of the fruit-growing area, but small fruits, such as the currant, raspberry, and gooseberry are extensively grown, while the balance of the area is taken up with the pear, apricot, plum, and cherry. The following table gives the acreage—bearing and non-bearing—under the principal kinds of fruit, and the quantity and value of fruit produced. Although statistics of area are not collected annually in Victoria, the acreage under each class of fruit is estimated from data based on the triennial collection of the number of trees, subject to annual variations in the total area under orchards and fruit gardens.

ORCHARDS AND FRUIT GARDENS.—VARIETIES, YIELD, AND VALUE, 1928-29.

Fruit.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
Apples .. acres	14,728	31,652	4,133	10,478	10,468	26,856	23	98,338
bushels	639,720	626,204	183,461	446,878	1,122,713	2,500,000	275	5,518,341
£	311,400	320,975	64,020	226,532	846,712	937,500	134	2,707,273
Apricots .. acres	2,075	4,986	93	3,472	704	1,572	2	12,904
bushels	153,113	468,536	3,911	347,050	33,073	110,000	35	1,115,743
£	87,990	128,847	3,335	85,208	37,207	22,000	20	864,607
Bananas .. acres	1,912	..	19,750	..	19	..	..	21,631
bushels	122,183	..	2,448,870	..	563	..	..	2,571,613
£	81,460	..	960,000	..	845	..	..	1,042,305
Cherries .. acres	3,639	1,493	2	693	(a)	57	2	5,886
bushels	111,924	51,765	57	36,077	(a)	2,000	3	201,826
£	145,170	47,883	51	26,607	(a)	1,500	4	221,215
Lemons .. acres	2,879	1,993	187	472	523	..	..	6,059
bushels	376,577	162,860	20,225	43,089	58,108	..	..	660,859
£	172,430	73,287	8,287	15,620	34,199	..	..	303,823
Nectarines and Peaches } acres	7,714	11,790	1,840	2,593	985	59	2	24,983
bshls.	450,930	1,056,291	100,201	177,294	51,894	4,000	..	1,840,610
Nuts .. acres	244,610	382,827	46,683	56,094	50,444	800	..	781,458
lbs.	465	528	1	1,455	(a)	..	..	2,449
£	114,620	186,099	160	819,392	(a)	..	..	1,120,271
Oranges .. acres	4,382	8,304	4	26,639	(a)	..	..	39,329
bushels	29,997	5,926	3,734	5,019	3,116	..	..	47,792
£	2,620,424	378,101	377,177	362,527	243,054	..	..	3,981,283
Pineapples .. acres	1,051,390	190,625	155,681	185,189	156,743	..	..	1,739,628
dozen	96	..	4,734	..	..	..	..	4,830
£	9,744	..	938,335	..	..	..	..	948,079
Pears .. acres	3,240	..	225,413	..	..	..	..	228,653
bushels	4,398	11,002	389	2,238	1,087	2,152	2	21,268
£	286,823	772,216	13,446	158,202	98,544	187,000	22	1,516,253
Plums .. acres	129,590	247,763	4,496	41,107	55,534	65,450	10	543,940
bushels	6,357	5,146	1,306	3,091	952	578	3	17,433
£	231,012	241,895	62,166	147,707	51,694	60,000	14	794,448
Small fruits .. acres	111,740	60,473	41,185	31,210	41,624	9,000	8	295,240
cwt.	(b)	414	..	56	14	2,764	..	3,248
£	43	7,710	..	1,762	(b)	40,277	..	49,792
Other fruits .. acres	240	16,079	..	2,011	218	44,500	..	63,048
£	1,749	4,392	2,283	1,269	862	49	1	10,905
£	82,928	135,769	96,919	31,360	23,920	105,900	..	470,796
Total acres ..	76,009	79,322	38,452	30,836	18,735	34,087	35	277,476
£	2,426,570	1,612,822	1,606,074	727,577	1,247,446	1,186,650	176	8,807,315

(a) Included with "Other Fruits."

(b) Not available.

(iii) *Relation to Population.* The acreage of the orchards and fruit gardens of Australia in relation to population declined during the past five years. The Australian

figure for 1928-29 amounted to 0.044 acres per head, whilst the range amongst the States varied from 0.031 in New South Wales to 0.157 acres in Tasmania. Details for orchards and fruit gardens for the years 1924-25 to 1928-29 are as follows :—

**ORCHARDS AND FRUIT GARDENS.—AREA PER 1,000 OF POPULATION,
1924-25 TO 1928-29.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Aus- tralia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25 ..	33	52	38	62	51	156	..	2	47
1925-26 ..	32	49	39	59	49	156	..	2	46
1926-27 ..	32	49	40	56	49	155	..	1	45
1927-28 ..	32	47	40	54	47	157	..	2	45
1928-29 ..	31	45	42	53	46	157	..	4	44

2. Imports and Exports of Fruit.—(i) *General.* A considerable export trade in both fresh and dried fruits is carried on by Australia with overseas countries. The import trade in fresh fruits declined heavily during the past five years, owing to the imposition of a Customs duty of 1d. per lb. on imported bananas, which had hitherto been the chief item of fresh fruit imported into Australia. The imports of dried fruits at present consist mainly of dates from Iraq. The export trade in fresh and dried fruits, however, has greatly expanded during the past quinquennium, the value of the shipments during 1928-29 amounting to £3,243,940. Apples constitute the bulk of the fresh fruit exported, although the exports of citrus fruits and pears are fairly considerable, and experiments are being conducted in regard to the dispatch of other fruits. Shipments of raisins and currants have developed into large proportions since 1914-15, and are mainly responsible for the increase in the dried fruits exports. Other fruits in the dried state, notably apricots, are also receiving attention from overseas.

(ii) *Fresh Fruits.* Information with regard to the Australian overseas trade in fresh fruits is given hereunder :—

FRESH FRUITS.—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1924-25 ..	3,228,200	32,009	101,348,900	1,089,544	98,120,700	1,057,535
1925-26 ..	3,228,900	35,154	149,673,100	1,553,650	146,444,200	1,518,496
1926-27 ..	5,086,900	56,932	75,776,600	805,573	70,689,700	748,641
1927-28 ..	4,772,200	61,606	186,625,800	1,819,796	181,853,600	1,758,190
1928-29 ..	6,350,000	69,011	82,706,700	942,960	76,356,700	873,949

The value of the exports of apples in 1928-29 amounted to £703,037, and of citrus fruits to £76,839, viz., lemons, £4,183, and oranges, £72,656.

(iii) *Dried Fruits.* Particulars of overseas imports and exports of dried fruits for the last five years are as follows :—

DRIED FRUITS(a).—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1924-25 ..	9,429,764	136,185	78,952,737	1,939,829	69,522,973	1,803,644
1925-26 ..	11,787,309	141,922	55,428,846	1,463,417	43,641,537	1,321,495
1926-27 ..	11,318,200	173,962	63,503,400	1,649,153	52,185,200	1,475,191
1927-28 ..	12,092,100	182,617	63,295,600	1,601,832	51,203,500	1,419,215
1928-29 ..	11,429,700	153,110	107,270,400	2,300,980	95,840,700	2,147,870

(a) Including raisins and currants referred to under Vineyards, § 15, 4.

(iv) *Jams and Jellies.* Jams and jellies were exported in large quantities during the war years, and in 1918-19 the record shipment of 79,277,560 lbs., valued at £1,847,970, was dispatched from Australia. Since that year, however, the trade has dwindled, the value of the exports in 1928-29 amounting to only £58,204. Particulars relative to imports and exports during each of the last five years are as follows :—

JAMS AND JELLIES.—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1924-25 ..	226,253	10,810	2,470,431	74,464	2,244,178	63,654
1925-26 ..	190,302	8,813	2,665,243	82,447	2,474,941	73,634
1926-27 ..	357,838	15,004	2,422,988	72,354	2,065,150	57,350
1927-28 ..	438,427	18,408	2,298,225	68,949	1,859,798	50,541
1928-29 ..	325,422	13,133	1,947,786	58,204	1,622,364	45,071

(v) *Preserved Fruit.* Details concerning the quantities and values of preserved fruit imported into Australia cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables preserved or partly preserved in liquid, or pulped, imported into Australia during 1928-29 was £218,336. Particulars in respect of exports are available, and the following shipments were sent overseas in 1928-29 :—Apricots, 4,806,646 lbs., £98,446; peaches, 11,807,542 lbs., £232,009; pears, 2,982,263 lbs., £71,763; pineapples, 17,911 lbs., £434; and other, 1,282,674 lbs., £31,692, or a total shipment of £446,034.

§ 17. Minor Crops.

1. *General.*—In addition to the crops previously dealt with, there are many others which, owing either to their nature, or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are included under the headings—Market Gardens,

Pumpkins and Melons, Nurseries, Grass Seed, Tobacco, and Millet. Cotton-growing has recently received considerable attention in the tropical portions of Australia, and the prospects of establishing this industry are hopeful. The decline in area under cultivation from 82,409 acres in 1924-25 to 26,122 acres in 1928-29 was due to poor seasons and difficulty in marketing the product. The total area in Australia during the season 1928-29 devoted to crops not dealt with in previous sections was 114,991 acres, the major portion of which consisted of cotton and market-garden products.

2. Market Gardens.—Under this head are included all areas on which mixed vegetables are grown. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., the figures are usually not included with market gardens, but are shown either under some specific head, or under some general head as "Other Root Crops," or "All Other Crops." The area under market gardens during each of the last five seasons is given hereunder :—

MARKET GARDENS.—AREA, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1924-25 ..	8,824	14,620	1,619	1,577	2,913	576	..	13	30,142
1925-26 ..	8,973	16,609	1,017	1,517	2,725	587	..	12	31,440
1926-27 ..	8,184	17,751	1,096	1,320	2,872	599	..	46	31,868
1927-28 ..	7,729	18,984	1,083	1,303	2,647	732	..	32	32,510
1928-29 ..	7,709	18,630	918	1,408	2,924	546	..	11	32,146

3. Grass Seed.—The total area under this crop during 1928-29, exclusive of New South Wales and Western Australia, for which States complete figures as to area are not available, was 4,402 acres, of which 1,856 acres were in Victoria, 310 acres in Tasmania, 936 acres in Queensland, and 1,300 acres in South Australia. The total yield for 1928-29, including New South Wales, was 67,718 bushels, valued at £81,724. In addition to the areas planted above, 711 acres were sown to canary seed in Queensland during 1928-29, and furnished a yield of 1,754 bushels, valued at £1,139.

4. Tobacco.—Tobacco-growing has undergone marked fluctuations, although at one time it promised to occupy an important place amongst the agricultural industries of Australia. Thus, as early as the season 1888-89, the area under this crop amounted to as much as 6,641 acres, of which 4,833 were in New South Wales, 1,685 in Victoria, and 123 in Queensland. This promise of importance was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2,000 acres, and that in Queensland to over 1,000 acres, the total area for the season 1920-21 had declined to 1,345 acres. Since that date the area has again fluctuated, but with an upward tendency, and in 1928-29, 2,238 acres were planted, of which 762 were in New South Wales, 1,317 in Victoria, 138 in Queensland, 14 in South Australia, and 7 in Western Australia. Greater attention is now being paid to the proper treatment of the leaf, and flue-curing is becoming more general. In all the States in which its cultivation has been tried, the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into Australia furnish an indication of the extensive local market which exists for an article grown and prepared to meet the requirements of consumers. The value of the net importations of tobacco into Australia during the year 1928-29 amounted to £2,165,948, comprising unmanufactured tobacco £1,903,631, cigars £108,141, cigarettes £488,729, and snuff £1,288, while manufactured tobacco revealed

a balance in favour of exports amounting to £335,841. Important proposals for the development of the tobacco-growing industry in Australia are now being formulated. As a result of a proposal by the British-Australasian Tobacco Co., and later of an agreement between that Company, the Federal and mainland State Governments, investigations into the tobacco industry of Australia have been carried out. The agreement, entered into in 1927, was for a period of three years, and the amount contributed was £30,000, of which the Company contributed £20,000, the Commonwealth Government £5,000, and each of the mainland State Governments £1,000. If at the end of this period the results are sufficiently encouraging a further sum of £60,000 will be provided, of which amount the Tobacco Company will contribute £30,000 and the Governments £30,000. The results of the investigations made have proved satisfactory in the production of a suitable leaf, and the control of the parasitic disease, blue mould, appears at present hopeful of attainment. Further experiments are necessary, however, in order to obtain the desired improvement in the culture of tobacco. The first period of three years in the agreement referred to expired on the 30th June, 1930, and future development will depend upon the results of the report of the Select Committee appointed by the Commonwealth Parliament to inquire into the industry.

5. Pumpkins and Melons.—The total area under this crop in Australia during 1928–29 was 13,121 acres, of which 2,345 acres were in New South Wales, 1,204 acres in Victoria, 8,746 acres in Queensland, 484 acres in Western Australia, 338 acres in South Australia, and 4 acres in Federal Capital Territory. The production in all the States amounted to 36,603 tons.

6. Hops.—Hop-growing in Australia is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1928–29 being 1,485 acres, of which 1,203 acres were in Tasmania, 281 acres in Victoria, and 1 acre in South Australia. The Tasmanian area, though still small, has increased considerably during the past twenty years, the total for the season 1901–2 being only 599 acres. In Victoria the area, which in 1901–2 was 307 acres, dwindled to 71 acres in 1918–19, then rose to 312 acres in 1925–26 and dropped to 281 in 1928–29. The cultivation of hops was much more extensive in Victoria some 40 years ago than at present, the area in 1883–84 being no less than 1,758 acres. During the year 1928–29 the exports of hops exceeded the imports by 397,546 lbs., the excess value being £9,159.

7. Flax.—For over twenty years flax has been grown intermittently in the Gippsland district of Victoria, and attempts have been made to introduce its cultivation into Tasmania and New South Wales, but without success. About the end of the year 1917 the shortage of flax fibre in the world had become acute, and endeavours were made by the Commonwealth Government to encourage the cultivation of flax. The acreage in Victoria increased from 419 acres in 1917–18 to 1,611 acres in 1919–20, but the area had declined in 1928–29 to 179 acres. Flax products to the value of more than £1,500,000 are annually imported into Australia, and, as it has been demonstrated that flax can be grown to perfection here, good prospects exist for the ultimate establishment of a local industry. In order to assist in this direction the Commonwealth Parliament has granted the payment of a bounty on the production of flax and linseed grown in Australia for a period of five years, commencing 1st March, 1930. The rates of bounty payable are 15 per cent. of the market value of the flax or linseed for the first two years, 10 per cent. for the next two years, and 7½ per cent. for the last year. The total amount paid shall not exceed £20,000 in any one financial year.

8. Millet.—Millet figures in the statistical records of three of the States. The total area devoted thereto in 1928–29 was 3,664 acres, of which 2,018 acres were in New South Wales, 1,337 in Victoria, 307 in Queensland, and 2 in the Northern Territory. The particulars here given relate to millet grown for grain and fibre, the quantity for green forage being dealt with in the section relating thereto.

9. **Nurseries.**—In all the States fairly large areas are occupied as nurseries for raising plants, trees, etc. Statistics of the area under flowers, fruit trees, etc., are available for New South Wales, Victoria, South Australia, and Western Australia. During 1928–29 the areas in those States were 596, 1,216, 132, and 110 acres respectively.

10. **Cotton.**—The cultivation of cotton was begun in Queensland in 1860, and ten years later the area cropped had increased from fourteen to upwards of fourteen thousand acres. The re-appearance of American cotton in the European market on the conclusion of the Civil War gave a severe setback to the new industry, and the area declined continuously till 1888, when only 37 acres were planted. The industry was resuscitated soon after, and manufacturing was undertaken on two separate occasions at Ipswich, but operations were at no time very extensive, and low prices over a term of years checked development. Added interest was shown in the crop in 1903, and in 1913 the Queensland Government made an advance of 1½d. per lb. on seed cotton, and ginned it on owner's account, the final return being equal to about 1½d. per lb.

Rising prices for the staple enabled the Government to offer the substantial guarantee of 5½d. per lb. for seed cotton of good quality for the three years ended 31st July, 1923, and as the result considerable activity was displayed in the industry, the area picked rising from 166 acres in 1920 to 50,186 in 1924. Government guarantees were continued until 1926, when the Commonwealth Government granted a bounty of 1½d. per lb. on the better grades and ¾d. on the lower grades of seed cotton grown in Australia. In addition to this direct assistance to the cotton-growing industry, the Government subsidized the cotton-manufacturing industry by granting a graduated bounty varying from ½d. to 1s. per lb. on all cotton yarn manufactured in Australia which contained 50 per cent. of home-grown cotton. The rates payable under the new Act for seed cotton vary from 1½d. per lb. for the first year for the higher grades and ¾d. per lb. for the lower grades to ½d. and ¼d. per lb. respectively for the year ending 30th September, 1936. The bounty payable on cotton yarn varies according to count, the rate decreasing each year until 1936. The amount of bounty payable in any financial year is limited to £260,000. The object of this policy is to foster and establish the primary and secondary industries concurrently, thus creating a home market for the raw cotton produced.

The area under cultivation and the yield in Queensland since the year 1919 are shown hereunder :—

COTTON.—AREA AND YIELD, QUEENSLAND, 1919 TO 1929.

Year.	Area. (a)	Yield of Unginned Cotton.
	Acres.	lbs.
1919	72	27,470
1920	166	57,065
1921	1,944	940,126
1922	8,716	3,956,635
1923	40,821	12,543,770
1924	50,186	16,416,170
1925	40,062	19,537,274
1926	18,743	9,059,907
1927	14,975	7,060,756
1928	20,316	12,290,910
1929 (b)	25,000	8,000,000

(a) Area harvested.

(b) Estimated.

Consequent upon the lapse of the Government guarantees and the change over to the bounty system, a cotton pool was formed in Queensland under the Primary Products Pools Act and a cotton board was elected to control the handling, financing, and marketing of all cotton grown in the State. The whole of the output in 1927 was sold to Australian

spinners on the basis of import parity prices, the net return to growers, including the bounty, being 5d. per lb. for top grade seed cotton. The bulk of this crop was left in the hands of the spinners and a market for the 1928 output was therefore sought overseas. Of the quantity exported, 97 per cent. was shipped to the United Kingdom, and the prices realized, coupled with the Commonwealth bounty, yielded a return sufficiently high to make cultivation profitable on land yielding a fair crop.

11. Coffee.—Queensland is the only State in which coffee-growing has been extensively tried, but the results have not been satisfactory. The area under crop reached its highest point in the season 1901-2 with 547 acres. In subsequent seasons the area fluctuated somewhat, but on the whole with a downward tendency, and in 1928-29 only 7 acres were recorded with a yield of 2,102 lbs.

12. Other Crops.—Amongst miscellaneous small crops grown in the several States may be mentioned tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

§ 18. Bounties.

With the object of encouraging the manufacture and production of certain articles in Australia, bounties have been granted by the Commonwealth Parliament and during the year ending 30th June, 1930, the sum of £518,641 was paid in connexion therewith. Of this amount, £260,387 was paid under the Iron and Steel Products Bounty Act, £55,018 under the Sulphur Bounty Act, £83,210 under the Wine Export Bounty Act, £118,967 under the Cotton Bounty Act, and £1,059 under the Papua and New Guinea Bounties Act. Fuller details will be found in the Production Bulletin issued by this Bureau.

§ 19. Fertilizers.

1. General.—In the early days of settlement in Australia, scientific cultivation was practically neglected. Farmers were neither under the necessity nor were they aware of the value of supplying the proper constituents to the soil for each class of crop. The widely divergent character of the soils, their degeneration by repeated cropping, the limitations of climatic conditions, and the difficulties of following any desired order of rotation of crops, all rendered it essential to give attention to artificial manuring. The introduction of the modern seed-drill acting also as a fertilizer-distributor has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made productive. There is reason to believe that this feature will be even more strikingly characteristic in the future.

2. Fertilizers Acts.—In order to protect the interests of users of artificial manures, legislation has been passed in each of the States, regulating the sale and preventing the adulteration of fertilizers. A list of these Acts and their main features will be found in Year Book No. 12 (page 378).

3. Imports.—The local production of artificial manures has greatly increased in recent years, and the home requirements of prepared fertilizers can now be supplied by Australian manufacturers. Imports of fertilizers are also expanding, but the bulk of the inward shipments consists of rock phosphates, which form the raw material for the home manufactured superphosphate, a fertilizer which has proved eminently suitable for the growing of cereals in Australian soils. During 1928-29 the value of rock phosphates imported represented more than 86 per cent. of the total importation of fertilizers. Nauru and Gilbert and Ellice Islands Colony in almost equal proportions supplied practically the whole of the shipments. Sodium nitrate is wholly obtained from Chile.

The imports of artificial manures during the last five years are given in the following table. Although considerable quantities of manufactured superphosphates were annually imported up till 1914-15, the importations of this fertilizer have now practically ceased.

FERTILIZERS.—IMPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Fertilizer.		1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Bonedust cwt.	..	..	..	100	(a)	(a)
" .. .. £	..	..	..	58	(a)	(a)
Guano cwt.	..	893,478	1,829	20,826	600	52,018
" £	..	98,515	1,061	1,238	242	6,438
Superphosphates .. cwt.	..	1,200	1,035	1,201	1,400	2,560
" £	..	785	517	573	937	1,834
Rock phosphates .. cwt.	..	5,751,583	6,463,733	10,171,652	9,220,120	12,349,710
" £	..	739,588	799,273	1,109,414	915,840	1,291,583
Soda nitrate cwt.	..	182,846	187,284	100,567	175,074	152,747
" £	..	104,729	105,384	60,951	91,885	75,888
Other cwt.	..	186,209	172,993	187,773	237,354	308,425
" £	..	79,616	80,900	87,281	103,634	112,232
Total cwt.	..	7,015,316	6,826,874	10,482,119	9,634,448	12,865,460
" £	..	1,023,233	987,135	1,259,515	1,112,538	1,487,975

(a) Now included with Other Fertilizers.

4. Exports.—The subjoined table shows the exports of artificial manures for the years 1924-25 to 1928-29. Practically the whole of these fertilizers are manufactured locally, and are shipped mainly to New Zealand, Japan, Java, and the Pacific Islands :—

FERTILIZERS.—EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Fertilizer.		1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Bonedust cwt.	..	13,942	10,012	2,668	74	39
" £	..	6,079	3,664	1,220	46	27
Superphosphates .. cwt.	..	57	149	21	33	316
" £	..	18	49	18	14	83
Rock phosphates .. cwt.	..	..	62	200	..	..
" .. .. £	..	..	24	58	..	..
Soda nitrate cwt.	..	2,529	1,445	398	7	6
" £	..	1,851	1,241	311	7	9
Ammonia sulphate .. cwt.	..	111,594	141,866	99,928	71,911	18,610
" £	..	73,665	88,745	61,478	42,229	11,255
Other cwt.	..	45,098	124,263	39,718	29,464	66,429
" £	..	13,916	47,011	16,237	12,861	30,097
Total cwt.	..	173,220	277,797	142,933	101,489	85,400
" £	..	95,529	140,734	79,322	55,157	41,471

5. Statistics of Use of Fertilizers.—Statistics regarding the use of manures are collected in all the States, and the particulars for 1928-29 are as follows :—

FERTILIZERS USED IN EACH STATE, 1928-29.

State or Territory.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
New South Wales ..	5,442,982	3,768,421	69.23	157,686	122,897
Victoria ..	5,505,651	4,575,116	83.11	114,345	257,498
Queensland ..	1,044,632	96,037	9.19	67,152	36,644
South Australia ..	4,660,003	4,256,827	91.35	45,647	171,965
Western Australia ..	4,259,269	4,577,900	98.64	53,500	201,022
Tasmania ..	273,152	245,863	90.00	11,917	23,500
Northern Territory ..	392	50	12.75	..	14
Fed. Cap. Territory ..	3,476	3,175	91.34	227	116
Total ..	21,189,557	18,701,389	88.26	450,474	813,656

(a) Includes area under sown grasses and manure used.

(b) 1926 figure.

(c) 1923 figure.

Similar particulars in respect of Australia as a whole during the past five years are as shown below :—

FERTILIZERS USED IN AUSTRALIA, 1924-25 TO 1928-29.

Year.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1924-25 ..	17,278,191	13,031,329	75.14	534,702	529,027
1925-26 ..	16,793,578	13,387,111	78.98	625,099	576,786
1926-27 ..	17,772,499	14,770,498	83.11	562,055	642,511
1927-28 ..	19,219,393	16,607,826	86.41	516,241	725,782
1928-29 ..	21,189,557	18,701,389	88.26	450,474	813,656

The percentage of the area manured on the total area cultivated has advanced from 75.14 to 88.26 during the past five years, while the use of artificial manures has increased by more than 284,629 tons during the same period.

6. Local Production of Fertilizers.—Statistics relative to the local production of fertilizers are incomplete, and detailed returns for fertilizer factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in Australia at latest available date was 104, made up as follows :—New South Wales, 20; Victoria, 30; Queensland, 24; South Australia, 11; Western Australia, 11; and Tasmania, 8. The production of superphosphates in Australia during 1928-29 amounted to 899,552 tons, the largest producing States being Victoria and Western Australia.

§ 20. Ensilage.

1. Government Assistance in Production.—Efforts have been made for some years by the various State Governments to educate the farming community in regard to the value of ensilage. Monetary aid is afforded in the erection of silos, and expert advice is supplied in connexion with the design of the silos and the cutting and packing of the silage.

2. **Quantity Made.**—Particulars concerning the number of holdings on which ensilage was made, and the quantity made during the seasons 1924-25 to 1928-29, are given in the following table:—

ENSILAGE MADE, 1924-25 TO 1928-29.

State or Territory.	1924-25.		1925-26.		1926-27.		1927-28.		1928-29.	
	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.
	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.
New South Wales ..	269	35,145	241	30,457	407	48,718	473	50,464	350	27,177
Victoria ..	106	6,667	113	6,092	94	6,132	75	6,037	89	7,775
Queensland ..	104	8,195	67	4,654	50	4,728	76	5,420	72	4,037
South Australia ..	20	2,067	23	2,857	23	2,405	17	2,415	12	2,808
Western Australia ..	29	2,267	43	3,325	72	5,642	72	5,147	93	7,022
Tasmania ..	10	301	3	170	8	488	12	526	5	115
Northern Territory ..	1	5	1	5	..	..	..	..	..	..
Total ..	539	54,667	496	47,560	654	68,113	725	70,009	621	48,934

(a) No. of holdings on which ensilage was made.

Following the drought of 1902-3 greater attention was paid to the making of ensilage, and during the four seasons ended 1909-10 there was an increase both in the number of holdings on which ensilage was made and in the quantity produced. The following five seasons, however, showed a falling off, but the reduction was due to the fact that stocks had not been drawn upon to any great extent during the previous seasons. The accumulated stocks proved of great value during the 1914 drought, though far below what would have been the case if more attention had been paid to production during the previous years when there was a surplus of green forage. The quantities made since that date have fluctuated considerably, the output in 1928-29 amounting to 48,934 tons.

§ 21. Agricultural Colleges and Experimental Farms.

1. **General.**—In most of the States agricultural colleges and experimental farms have been established with a view to the promotion of more scientific methods in agriculture, stock-breeding and dairying. In the colleges, and on some of the farms, provision is made for the accommodation of pupils to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilizers are made, manures are tested, and elementary veterinary science, etc., are taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of showing that it is practicable to produce certain crops in a given place, but also to show how it is possible to make farming pay in the locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder; in cheese and butter making; in the management, breeding, and preparation for the market of live stock; in the eradication of pests and weeds; and in carpentering, blacksmithing, and other trades.

Travelling expert lecturers visit the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins.

2. **Particulars of Agricultural Colleges and Experimental Farms.**—In previous issues of this volume detailed information was given regarding agricultural colleges, experimental farms, and agricultural education generally. See Year Book No. 11, pp. 393-5.

3. **Particulars respecting Agricultural and Stock Departments.**—A synopsis of the activities and operations of the Agricultural and Stock Departments of the several States on 30th June, 1920, will be found in Year Book No. 14, pages 1180 to 1191. The main features of organization are set out under their respective headings as regards staff, expenditure, work undertaken in agricultural colleges, technical schools, experimental farms and orchards and vineyards. The subject of lectures and other forms of agricultural instruction by experts is dealt with, as well as such matters as the distribution of plants, and the special steps taken to disseminate information amongst agriculturists, and to facilitate the marketing of products.

CHAPTER XVIII.

FARMYARD, DAIRY, AND BEE PRODUCTS.

§ 1. Introductory.

1. **General.**—The introduction of cattle into Australia, and the early history of the dairying industry are referred to in some detail in earlier issues of this work (see Official Year Book No. 6, p. 430). It may here be noted that the original stock has been crossed with specially imported stud cattle, while further judicious crossing of strains has resulted in an increased and improved milk supply. In Australia, dairy cattle thrive in the open throughout the year, local climatic conditions demanding no protection other than tree plantations for shelter, and rugging in the coldest weather. Indigenous and imported grasses furnish food during the greater part of the year, and winter fodder, when necessary, is given to the cattle in the fields. With the adoption of scientific methods in the treatment of animals and pasturages and in the processes of manufacture, coupled with effective State supervision, the dairying industry has shown rapid expansion.

2. **Official Supervision of Industry.**—Dairy experts, under the supervision of the various State Agricultural Departments, give instruction in approved methods of production, and inspect animals, buildings, and marketable produce. A high standard of cleanliness, both of personnel and *matériel*, prevails. Financial assistance of a temporary nature is also given, advances made being generally repaid with promptitude.

The export trade is regulated by the terms of the Commonwealth Commerce Act 1905 and regulations thereunder. The provisions of this Act are set out in detail in Official Year Book No. 6, pp. 431–2. It will be sufficient to note here that the true trade description, &c., must be marked on all produce intended for export, while official inspection ensures the maintenance of purity and quality. Upon request of the exporter the goods are certificated by the inspector.

3. **Mixed Farming.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places remote from the metropolis well-equipped factories have been established.

4. **Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or “creameries,” has resulted in a considerable reduction in the cost of manufacture, since improved appliances such as refrigerators may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is rapidly diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires only $2\frac{1}{4}$ gallons.

5. **Butter and Cheese Factories.**—The factories in Australia for the manufacture of butter, cheese, and condensed milk numbered 523 in 1928-29. These were distributed in the various States as follows:—New South Wales, 144; Victoria, 169; Queensland, 119; South Australia, 48; Western Australia, 12; and Tasmania, 31.

§ 2. Dairy Cattle and Dairy Products.

1. **Dairy Herds.**—The dairy herds of Australia were severely depleted during the drought of 1914-15, when the number was reduced to 1,684,393. Following that year substantial increases have taken place, and the number recorded in 1928 represents a gain of nearly 565,000 in the past decade. In New South Wales, Victoria, South Australia, and Tasmania the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory, and Western Australia there is a greatly preponderating number of other cattle, dairying not being firmly established in the tropical regions of the Continent. In Southern Queensland, however, the industry has developed remarkably during the past decennium, and the progress attained in that area has been largely responsible for the Australian increases since 1916. The returns for 1928 include heifers intended for milking and being within three months of calving. Details were not collected for Victoria, but the total of such heifers in the other States amounted to 121,589.

CATTLE AND DAIRY CATTLE.—NUMBER, 1924 TO 1928.

State.		1924.	1925.	1926.	1927.	1928.
New South Wales	{ All Cattle ..	2,871,196	2,931,818	2,813,144	2,848,654	2,784,615
	{ Dairy Cows ..	834,557	840,930	885,238	894,440	907,774
Victoria	{ All Cattle ..	1,605,554	1,513,787	1,435,761	1,327,077	1,304,426
	{ Dairy Cows ..	760,207	727,940	673,089	626,139	615,092
Queensland	{ All Cattle ..	6,454,653	6,436,645	5,464,845	5,225,804	5,128,341
	{ Dairy Cows ..	584,886	611,426	611,227	645,316	670,805
South Australia	{ All Cattle ..	400,423	373,597	340,007	316,314	263,016
	{ Dairy Cows ..	133,619	127,670	127,292	117,580	108,969
Western Australia	{ All Cattle ..	891,564	835,911	827,303	846,735	837,527
	{ Dairy Cows ..	60,882	63,008	69,627	70,880	69,047
Tasmania	{ All Cattle ..	225,740	212,373	213,112	210,894	208,812
	{ Dairy Cows ..	70,073	70,382	67,457	66,902	94,268
Northern Territory	{ All Cattle ..	855,285	970,342	863,597	835,390	763,751
	{ Dairy Cows ..	(a)	(a)	(a)	(a)	(a)
Federal Capital Territory	{ All Cattle ..	5,058	5,312	5,509	6,188	5,269
	{ Dairy Cows ..	413	646	815	1,417	704
Australia..	{ All Cattle ..	13,309,473	13,279,785	11,963,278	11,617,056	11,300,757
	{ Dairy Cows ..	2,444,637	2,442,002	2,434,745	2,422,674	2,466,659

(a) Not available.

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with breed, locality and season, reaching as high as 1,000 gallons, but averaging for the whole of Australia for all dairy cows and for all seasons prior to 1916 considerably under 300 gallons per annum. Of late years an improvement in the grade of dairy cattle has taken place, and the 300 gallon mark has been exceeded on each of the last five seasons, the yield of 363 gallons in 1924 constituting a record. The best yields over a series of years appear to be in Victoria, Tasmania, South Australia and New South Wales, while Queensland in normal years is above Western Australia. In the following table the annual average yields per cow for the last five years are based on the number of dairy cows which were in milk during any part of the year. The average given is considerably below that for cows which were yielding during the greater part of the year. The highest averages were, of course, obtained in those States which have most extensively adopted scientific methods of dairying, such as systematic breeding, culling of herds, milk testing, etc.

MILK PRODUCTION, 1924 TO 1928-29.

Heading.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia. (b)
1924—								
Dairy Cows (a) .. No.	809,691	749,178	548,707	135,029	61,357	70,285	394	2,374,641
Production 1,000 gals.	316,810	294,765	170,074	45,426	13,363	21,840	116	862,394
Aver. per cow .. gals.	391	393	310	336	218	311	294	363
1925-26—(c)								
Dairy Cows (a) .. No.	837,744	744,074	568,156	130,644	61,945	70,227	530	2,413,320
Production 1,000 gals.	289,861	255,120	153,386	41,386	14,823	18,684	199	773,459
Aver. per cow .. gals.	346	343	270	317	239	266	375	320
1926-27 (c)								
Dairy Cows (a) .. No.	837,373	700,515	553,472	123,066	63,768	68,920	730	2,347,844
Production 1,000 gals.	277,917	258,437	136,416	40,434	15,553	21,009	198	749,964
Aver. per cow .. gals.	332	369	246	329	244	305	271	319
1927-28 (c)								
Dairy Cows (a) .. No.	837,617	649,614	565,913	114,459	65,701	67,190	1,082	2,301,566
Production 1,000 gals.	283,046	260,648	180,679	37,947	17,159	22,556	220	802,255
Aver. per cow .. gals.	338	401	319	332	261	336	203	349
1928-29 (c)								
Dairy Cows (a) .. No.	849,769	620,616	606,637	105,800	65,982	67,491	964	2,317,259
Production 1,000 gals.	277,378	279,032	180,396	35,701	18,252	24,444	245	815,448
Aver. per cow .. gals.	326	450	297	337	277	362	254	352

(a) Mean for the year. (b) Exclusive of Northern Territory. (c) Year ended 30th June.

3. Butter and Cheese.—Although the quantity of dairy production is largely affected by the nature of the season, an important advance in the output of butter has taken place in the past decade. During that period the average annual production increased from 183,000,000 lb. for the quinquennium 1913-1917, to 281,000,000 lb. for the latest five years under review. Queensland was responsible for the largest share of the increased output during recent years. The maximum output of butter in Australia was recorded in 1924, when, as a result of a specially favourable season, 313,952,291 lb. were manufactured.

The manufacture of cheese is also largely dependent upon seasonal conditions. The average for the last decennium is, however, much greater than that for the previous one. The production in 1921 of 32,653,003 lb. is the highest yet recorded, while for 1928-29 the production, amounting to 30,217,101 lb., follows very closely.

The development in dairy production since 1896, and in the exports of butter from 1901 onwards are shown in the graphs on page 468. Particulars for the past five years are as follows:—

BUTTER AND CHEESE PRODUCTION, 1924 TO 1928-29.

State.	1924.	1925-26.	1926-27.	1927-28.	1928-29.
BUTTER.					
	lb.	lb.	lb.	lb.	lb.
New South Wales	211,719,871	106,953,339	95,832,624	100,794,838	95,337,240
Victoria	210,849,382	81,747,291	81,995,815	84,270,812	93,728,516
Queensland	270,406,492	63,001,073	51,402,633	72,039,151	77,044,859
South Australia	16,066,694	13,882,350	13,416,904	12,136,688	11,315,714
Western Australia	2,962,630	2,591,318	3,829,728	4,205,258	5,051,088
Tasmania	26,455,746	5,122,992	6,032,597	6,514,642	5,395,689
Federal Capital Territory ..	15,476	14,322	20,758	16,065	10,094
Australia	313,952,291	273,313,685	252,581,059	280,037,404	289,883,200
CHEESE.					
	lb.	lb.	lb.	lb.	lb.
New South Wales	27,705,596	6,462,535	6,735,960	7,284,622	6,339,052
Victoria	26,193,135	5,279,009	5,997,648	5,621,945	5,505,932
Queensland	212,643,863	12,580,942	9,260,043	14,128,420	14,391,910
South Australia	3,743,628	3,636,278	3,708,730	3,405,456	2,975,095
Western Australia	4,055	3,818	5,172	5,088	7,526
Tasmania	21,152,015	836,738	971,644	1,029,344	997,586
Australia	31,442,292	28,799,320	26,679,197	31,534,875	30,217,101

(a) For year ended 30th June of year following.

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk represents "milk" the bulk of which is reduced by evaporation. The industry is of comparatively recent growth, the quantity of milk treated in 1901 being negligible, but production increased annually until in 1911 the output nearly doubled that of the previous year. Thenceforward rapid progress was made, the greatest development taking place in Victoria, where the industry is most largely established. There is still an import of milk, but the exports in each year far outweigh the quantity imported. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the returns for the last five years were as follows :—

CONDENSED, CONCENTRATED, OR POWDERED MILK MADE, 1924-25 TO 1928-29.

Year.				N.S.W.	Victoria.	Queensland.	Australia.
				lb.	lb.	lb.	lb.
1924-25	..	..	..	5,804,191	45,693,120	10,511,919	62,009,230
1925-26	..	..	..	5,745,454	43,646,852	8,831,623	58,223,929
1926-27	..	..	..	a	48,186,040	a	559,180,891
1927-28	..	..	..	a	53,876,662	a	c53,876,662
1928-29	..	..	..	a	53,948,559	a	c53,948,559

(a) Not available for publication.

(b) Including New South Wales and Queensland.

(c) Victorian total only.

5. **Oversea Trade in Butter, Cheese, and Milk.**—The following tables give the imports, exports, and net exports of butter, cheese, and milk. In each of the five years dealt with the exports of butter, cheese, and condensed milk exceeded the imports.

BUTTER, CHEESE, AND MILK, IMPORTS AND EXPORTS.—AUSTRALIA, 1924-25 TO 1928-29.

Products.				1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
IMPORTS.								
Butter	..	..	..	lb.	19,717	2,991,243	7,160,864	6,975,370
"	..	..	..	£	1,340	246,703	519,672	549,548
Cheese	..	..	..	lb.	356,717	1,487,023	1,789,766	2,084,486
"	..	..	..	£	37,448	111,827	133,600	116,200
Milk—concentrated and preserved (a)	..	..	..	lb.	367,073	348,178	647,122	931,344
"	..	..	..	£	82,359	20,398	34,115	86,837

EXPORTS.

Butter	..	..	..	lb.	145,281,326	97,899,824	76,767,844	99,164,046	102,442,843
"	..	..	..	£	10,006,081	7,006,830	5,465,347	6,905,933	7,545,341
Cheese	..	..	..	lb.	10,397,392	6,884,347	3,663,175	6,933,857	8,335,078
"	..	..	..	£	865,764	271,973	133,266	260,679	330,165
Milk—concentrated and preserved (a)	..	..	..	lb.	29,172,996	25,908,328	17,759,929	20,640,224	25,402,575
"	..	..	..	£	1,694,634	1,476,422	1,081,256	1,188,903	1,424,854

NET EXPORTS. (b)

Butter	..	..	..	lb.	145,261,609	94,908,581	69,606,980	92,189,576	102,441,879
"	..	..	..	£	10,004,741	6,760,127	4,945,675	6,356,385	7,545,341
Cheese	..	..	..	lb.	10,040,675	5,397,324	1,873,409	4,849,371	7,819,821
"	..	..	..	£	328,316	160,146	— 334	144,679	284,348
Milk—concentrated and preserved (a)	..	..	..	lb.	28,805,923	25,560,150	17,112,807	19,708,880	24,628,460
"	..	..	..	£	1,662,275	1,456,024	1,047,141	1,152,066	1,391,432

NOTE.—The minus sign (—) indicates net imports.

(a) See definition above.

(b) Excess of exports over imports.

6. **Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the subtraction or addition of the net export or import for the corresponding period gives approximately the quantity available for consumption in Australia. The figures for the past five years are as follows :—

BUTTER AND CHEESE.—LOCAL CONSUMPTION, 1924 TO 1928-29.

Products.	1924.	1925-26.	1926-27.	1927-28.	1928-29.
	lb.	lb.	lb.	lb.	lb.
Butter .. Total ..	168,690,682	178,405,104	182,924,079	187,847,828	187,441,321
.. .. Per head of population ..	28.72	29.77	29.94	30.13	29.58
Cheese .. Total ..	21,401,617	23,401,996	24,805,788	26,685,504	22,397,280
.. .. Per head of population ..	3.64	3.91	4.06	4.28	3.53

The quantity available for consumption in 1928-29 averaged 29½ lb. of butter and 3½ lb. of cheese, or a total of 33 lb. per head of population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom in normal times is given at about 25 lb. per head per annum.

§ 3. Pigs and Pig Products.

1. **Pigs.**—The number of pigs in Australia from 1924 to 1928 is shown below :—

PIGS.—NUMBER, 1924 TO 1928.

State.	1924.	1925.	1926.	1927.	1928.
New South Wales (a) ..	339,378	382,331	332,827	301,819	311,605
Victoria ..	288,509	339,601	284,271	212,785	222,084
Queensland ..	156,163	199,598	183,662	191,947	215,764
South Australia ..	80,988	90,794	79,108	69,733	62,723
Western Australia ..	66,375	74,316	69,798	59,810	49,243
Tasmania ..	47,305	41,009	38,906	41,752	48,304
Northern Territory ..	1,000	382	343	292	407
Federal Cap. Territory (a) ..	291	343	94	69	51
 Australia ..	 980,009	 1,128,374	 989,009	 878,207	 910,181

(a) As on 30th June of year following.

For many years the number of pigs in Australia has fluctuated considerably. There was a heavy falling off in 1915, followed by substantial increases during the next two years, the number in 1917, viz., 1,169,365, being the highest recorded in Australia. From 1917 onwards the numbers have remained fairly constant at about 900,000. The number of pigs per head of population and the number per square mile, will be found in the tables of live stock, page 451.

2. **Bacon and Ham.**—(i) *Production.* The production of bacon and ham is increasing fairly rapidly, the averages for the past three quinquennia being 56,000,000, 59,000,000, and 73,000,000 lb. respectively. No increase in the volume of exports has taken place, the extra production being needed to supply the local demand, which is expanding with the population and the increasing consumption per head.

BACON AND HAM.—PRODUCTION, 1924 TO 1928-29.

State.	1924.	1925-26.	1926-27.	1927-28.	1928-29.
	lb.	lb.	lb.	lb.	lb.
New South Wales ..	a21,068,976	22,949,531	24,600,275	25,479,208	623,087,271
Victoria ..	a21,993,869	21,213,925	20,952,310	20,605,148	19,401,447
Queensland ..	a15,640,561	18,326,728	18,288,690	18,264,855	22,043,114
South Australia ..	a5,374,457	5,600,760	5,165,670	5,111,465	5,110,352
Western Australia (b)	2,797,151	2,960,139	2,678,830	2,760,694	2,557,068
Tasmania ..	a2,428,966	2,314,756	1,946,323	2,780,304	2,298,745
Federal Cap. Territory	a7,820	8,840	2,790	..	1,400
Total ..	69,311,800	73,374,679	73,634,888	75,001,674	74,499,397

(a) For year ended 30th June of year following.

(b) A portion only from pigs slaughtered in the State; balance imported and subsequently cured.

(ii) *Local Consumption.* From about 1904 onwards the production of bacon and ham has been sufficient to meet the local demand and provide a small surplus for export. The total home consumption and the average per head of population for the last five years are given hereunder :—

BACON AND HAM.—LOCAL CONSUMPTION, 1924 TO 1928-29.

Particulars.	1924.	1925-26.	1926-27.	1927-28.	1928-29.
	lb.	lb.	lb.	lb.	lb.
Total ..	67,969,350	72,205,137	72,175,870	73,823,995	73,441,419
Per head of population ..	11.57	12.05	11.81	11.84	11.59

3. *Oversea Trade in Pig Products.*—The oversea trade in pigs and pig products for the last five years is shown in the following table :—

PIG PRODUCTS.—AUSTRALIAN TRADE, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Pigs.					
Imports No.	10	6	8	..	85
" £	150	250	223	..	707
Exports No.	65	320	418	328	201
" £	676	1,951	2,506	1,294	934
Net Exports .. No.	55	314	410	328	116
" £	526	1,701	2,283	1,294	227

BACON AND HAM.

Imports lb.	322,106	509,101	374,814	356,288	406,335
" £	18,492	33,773	23,101	21,108	23,465
Exports lb.	1,664,556	1,678,643	1,833,832	1,533,967	1,464,313
" £	124,891	139,864	147,886	129,073	122,929
Net Exports .. lb.	1,342,450	1,169,542	1,459,018	1,177,679	1,057,978
" £	106,399	106,091	124,785	107,965	99,464

PIG PRODUCTS.—AUSTRALIAN TRADE, 1924-25 TO 1928-29—*continued*.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
LARD.					
Imports lb.	112,084	244,517	575,293	712,307	420,609
" £	4,080	8,787	17,169	20,092	11,188
Exports lb.	1,523,530	1,953,796	1,334,421	1,380,960	1,609,914
" £	42,744	56,630	38,839	38,209	41,741
Net Exports .. lb.	1,411,446	1,709,279	759,128	668,653	1,189,305
" £	38,664	47,843	21,670	18,117	30,553

FROZEN PORK.

Imports lb.	962,639	466,425	733,179	2,112,595	2,288,385
" £	35,695	20,066	31,657	67,876	76,141
Exports lb.	61,393	90,106	481,330	159,494	199,336
" £	2,749	3,647	16,608	6,183	7,856
Net Exports .. lb.	-901,246	-376,319	-251,849	-1,953,191	-2,089,049
" £	-32,946	-16,419	-15,049	-61,693	-68,285

NOTE.—The minus sign (—) signifies net imports.

The output of pig products in Australia is usually sufficient to meet local requirements and provide a small surplus for export. During the last five years the value of the average annual net export amounted to £101,432, the bulk of the shipments consisting of bacon, ham and lard.

§ 4. Total Dairy Production.

The total dairy production of Australia in 1928-29 is shown below :—

TOTAL DAIRY PRODUCTION.—AUSTRALIA, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Total.
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MILK.

Used for—	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
Butter ..	210,545,300	208,623,670	151,376,850	24,465,445	10,347,910	17,356,000	29,394	622,744,578
Cheese ..		5,411,230		2,806,971	..	1,024,000	..	
Condensing and concentrating } Other purposes ..	9,722,984 ..	14,958,830	16,004,801	.. ..	.. ..	.. ..	.. ..	49,928,816
	57,109,716	50,038,020	13,014,192	8,428,776	7,904,466	6,064,000	215,219	142,774,389
Total ..	277,378,000	279,031,750	180,395,852	35,701,192	18,252,376	24,444,000	244,613	815,447,783

BUTTER.

In Factories On Dairy and other Farms ..	lb. 90,826,582	lb. 90,268,977	lb. 74,386,663	lb. 8,156,870	lb. 3,622,324	lb. 5,385,012	lb. ..	lb. 272,641,428
	4,510,658	3,464,539	2,658,106	3,158,844	1,428,704	2,010,677	10,094	17,241,772
Total ..	95,337,240	93,728,516	77,044,859	11,315,714	5,051,088	7,395,689	10,094	280,883,200

(a) Including milk used for making cheese.

TOTAL DAIRY PRODUCTION.—AUSTRALIA, 1928-29—*continued*.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Total.
CHEESE.								
In Factories	lb. 6,203,409	lb. 5,259,078	lb. 14,390,787	lb. 2,975,095	lb. (b)	lb. 680,925	lb. ..	lb. 29,509,294
On Dairy and other Farms ..	135,643	246,854	1,123	..	7,526	316,661	..	707,807
Total ..	6,339,052	5,505,932	14,391,910	2,975,095	7,526	997,586	..	30,217,101

CONDENSED, CONCENTRATED, OR POWDERED MILK.

In Factories	lb. (b)	lb. 53,948,559	lb. (b)	lb. ..	lb. ..	lb. ..	lb. ..	lb. 53,948,559
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BACON AND HAM.

In Factories	lb. 22,340,106	lb. 18,611,728	lb. 21,710,900	lb. 4,654,651	lb. 2,438,462	lb. 1,594,645	lb. ..	lb. 71,350,492
On Dairy and other Farms ..	747,165	789,719	332,214	455,701	118,606	704,100	1,400	3,148,905
Total ..	23,087,271	19,401,447	22,043,114	5,110,352	2,557,068	2,298,745	1,400	74,499,397

(a) A portion only from pigs slaughtered in the State, the balance being imported and subsequently cured. (b) Figures not available for publication.

Particulars in regard to the production of other milk products are not available for all the States, but the following articles were made in Victoria during 1928-29:—Casein, 3,340,171 lb.; milk sugar, 310,426 lb.; and 210,967 lb. of ice cream mixture.

§ 5. Poultry Farming.

1. *General*.—Poultry stocks are largely maintained by farmers, and production therefrom furnishes a considerable addition to the annual agricultural or dairying returns. During recent years, however, poultry-keeping has assumed an independent position among rural industries, while it is also carried on in conjunction with pig-farming. Special poultry farms have been instituted for scientific breeding, poultry experts give lectures and instruction, and egg-laying competitions are conducted. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have been greatly improved by careful breeding. Co-operative egg-collecting circles have been formed in some districts; eggs are also delivered with the milk and cream to the local butter factories, and thence forwarded to market.

2. *Poultry Products*.—There is some difficulty in obtaining complete figures for the yield of poultry products. The following values relate to poultry and eggs:—

POULTRY AND EGGS.—VALUE OF PRODUCTION, 1924-25 TO 1928-29.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. (a)	Australia.
	£	£	£	£	£	£	£
1924-25 ..	2,727,000	4,326,295	530,782	1,148,322	286,350	300,000	9,318,749
1925-26 ..	3,446,000	4,515,400	621,876	1,094,205	305,888	300,000	10,283,369
1926-27 ..	3,807,500	4,819,500	500,237	1,046,056	330,903	300,000	10,804,196
1927-28 ..	3,924,350	4,760,000	598,467	1,234,532	426,422	300,000	11,247,869
1928-29 ..	3,329,000	4,348,000	619,329	1,053,939	456,242	300,000	10,109,695

(a) Estimated.

(b) Includes £3,185, Federal Capital Territory.

3. **Oversea Trade in Poultry Products.**—The Australian oversea trade in poultry products is confined chiefly to eggs, which are mainly consigned to the United Kingdom. New South Wales, Victoria, and Queensland are participating in this trade, which, during 1928-29, amounted to £219,056. The exports of frozen poultry have fluctuated considerably in recent years, being valued at £15,341 during 1928-29 as compared with £50,205 for 1921-22. The oversea trade during the past five years was as follows :—

POULTRY PRODUCTS, TRADE.—AUSTRALIA, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
LIVE POULTRY.					
Imports No.	459	384	281	264	310
" £	1,084	1,475	1,604	1,002	1,244
Exports No.	2,057	3,418	1,847	2,585	2,116
" £	1,527	2,311	1,311	1,837	1,757
Net Exports .. No.	1,598	3,034	1,566	2,341	1,806
" £	443	836	-293	835	513

FROZEN POULTRY.					
Imports lb.	11,591	12,367	12,340	66,677	14,315
" £	752	741	749	4,766	1,055
Exports pair	10,898	22,381	19,880	9,570	12,419
" £	14,141	25,242	30,259	8,930	15,341
Net Exports .. (a)	(a)	(a)	(a)	(a)	(a)
" £	13,389	24,501	29,510	4,164	14,286

Eggs.					
Imports doz.	30,051	29,652	24,182	25,752	21,349
" £	1,796	2,003	1,507	1,579	1,210
Exports doz.	692,015	1,531,744	3,151,990	1,104,005	2,916,338
" £	53,538	116,681	233,672	85,844	218,929
Net Exports .. doz.	661,964	1,502,092	3,127,808	1,078,253	2,894,989
" £	51,742	114,678	232,165	84,265	217,719

EGG-CONTENTS.					
Imports lb.	32,105	21,495	39,675	38,858	39,483
" £	7,190	4,313	6,382	6,531	5,147
Exports lb.	(a)	(a)	(a)	(a)	(a)
" £	144	95	97	17	127
Net Exports .. lb.	(a)	(a)	(a)	(a)	(a)
" £	-7,046	-4,218	-6,285	-6,514	-5,020

NOTE.—The minus — signifies net imports.

(a) Quantity not available.

§ 6. Bee Farming.

1. **General.**—As is the case with poultry-farming, bee-farming is frequently carried on in conjunction with agriculture or dairying. The returns of honey from productive hives during 1928-29 gave an average of 80 lb. per hive, while the average quantity of wax was 0.95 lb. per hive.

2. Production of Honey and Beeswax.—The number of hives and the production of honey and beeswax during the year 1928-29 are given in the following table :—

BEE-HIVES, HONEY, AND BEESWAX, 1928-29.

State.	Bee Hives.			Honey Produced.		Beeswax Produced.	
	Pro- ductive.	Unpro- ductive.	Total.	Quantity.	Value.	Quantity.	Value.
	No.	No.	No.	lb.	£	lb.	£
New South Wales ..	32,444	8,711	41,155	2,354,845	46,100	30,064	2,700
Victoria ..	44,109	11,138	55,247	4,181,571	91,472	49,675	4,760
Queensland ..	14,194	3,053	17,247	667,846	13,629	13,629	870
South Australia ..	31,960	4,653	36,613	3,047,421	50,790	28,041	1,986
Western Australia ..	10,261	2,140	12,401	509,415	7,954	6,555	560
Tasmania ..	3,246	1,208	4,454	89,969	2,245	1,465	145
Fed. Cap. Territory..	105	15	120	12,900	253	162	15
Australia ..	136,319	30,918	167,237	10,863,967	212,443	129,591	11,036

The table hereunder gives the production of honey and beeswax for the latest available five years :—

HONEY AND BEESWAX PRODUCTION, 1924-25 TO 1928-29.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
HONEY.								
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1924-25	3,088,550	4,054,975	691,136	2,764,389	378,889	95,476	1,600	11,075,015
1925-26	2,234,495	2,114,807	801,587	1,360,916	311,492	116,392	600	6,940,289
1926-27	1,510,420	2,370,310	461,009	1,918,195	553,238	75,876	12,120	6,901,168
1927-28	1,154,201	2,992,860	394,960	931,711	366,286	88,419	..	5,928,437
1928-29	2,354,845	4,181,571	667,846	3,047,421	509,415	89,969	12,900	10,863,967
BEESWAX.								
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1924-25	40,043	47,117	9,883	27,837	6,844	1,666	65	133,455
1925-26	38,171	28,812	11,888	11,772	3,737	1,566	100	96,046
1926-27	22,532	33,212	8,785	22,368	5,190	1,224	104	93,441
1927-28	17,139	34,358	7,504	13,069	5,501	1,337	..	78,908
1928-29	28,764	49,675	13,629	28,041	6,555	1,465	162	128,291

The quantity of honey and beeswax produced naturally varies from year to year according to the condition of the seasons. During the last five years New South Wales has produced 10,342,511 lb. of honey and 146,649 lb. of beeswax, while the Victorian figures amounted to 15,714,523 lb. and 193,200 lb. respectively for honey and beeswax. These two States together accounted for 62.47 per cent. of the total production of honey, and 64.10 per cent. of the beeswax. Next in order of importance were South Australia, Queensland, and Western Australia.

3. Oversea Trade in Bee Products.—In normal years the local production of honey exceeds Australian requirements, and a small quantity is available for export. During the past five years the value of the exports amounted to only £26,488, or an annual average of £5,208, owing to the decrease in production. The more general use of frame hives has affected the production of wax, and as a result the quantity imported has exceeded that exported during each of the past five years.

BEE PRODUCTS.—IMPORTS, EXPORTS, ETC., AUSTRALIA, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
HONEY.					
Imports lb.	1,008	4,684	657	922	11,142
" £	33	211	20	43	349
Exports lb.	137,116	113,401	402,745	281,090	83,418
" £	3,807	3,756	9,157	6,912	2,856
Net Exports .. lb.	136,108	108,717	402,088	280,168	72,276
" £	3,774	3,545	9,137	6,869	2,507

BEESWAX.

Imports lb.	109,816	22,937	75,104	96,101	82,261
" £	8,288	2,195	6,951	8,413	8,118
Exports lb.	1,956	1,677	326	3,596	1,659
" £	187	131	29	346	149
Net Exports .. lb.	-107,860	-21,360	-74,778	-92,505	-80,602
" £	- 8,101	- 2,064	- 6,922	- 8,067	- 7,969

NOTE.—The minus sign (—) signifies net imports.

§ 7. Value of Farmyard, Dairy, and Bee Products.

The value of the farmyard, dairy and bee products raised in Australia in 1928-29 was as follows :—

FARMYARD, DAIRY, AND BEE PRODUCTS.—VALUE, 1928-29.

Products.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£	£
Milk, consumed as such ..	2,944,720	2,580,085	671,044	434,609	407,574	312,675	..	11,097	7,361,804
Butter ..	7,455,168	7,682,218	6,362,160	1,026,613	425,479	615,124	..	789	23,566,756
Cheese ..	288,938	330,364	641,279	110,953	..	39,609	..	..	1,411,938
Condensed & concentrated milk ..	1,507,421	61,705,310	1,275,124	..	..	..	..	..	6,236,488
Bacon and ham ..	521,190	1,145,348	241,143	316,142	168,942	118,128	..	73	1,681,883
Pork ..	22,274	474,259	41,137	150,667	125,362	117,485	534	1,243	118,923
Lard ..	9,786	38,400	17,863	7,085	5,194	4,833	..	..	55,984
Live Stock ..	3,329,000	4,348,000	619,329	1,053,939	456,242	300,000	..	3,185	10,109,695
Poultry and eggs ..	48,800	96,232	14,499	52,776	8,514	2,390	..	268	223,479
Honey and wax ..	..	..	..	..	..	..	..	..	..
Total ..	16,127,297	18,423,464	9,883,578	3,152,784	1,597,307	1,615,158	707	16,655	50,716,950

(a) Includes other Milk Products made.

(b) Includes casein £81,196, and milk sugar £12,157.

§ 8. Exports of Australian Farmyard, Dairy, and Bee Products.

The quantities and values of Australian farmyard, dairy, and bee products exported during each of the last five years are shown below :—

AUSTRALIAN FARMYARD, DAIRY AND BEE PRODUCTS.—EXPORTS,
1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
QUANTITY.					
Beeswax lb.	782	1,577	326	3,596	1,659
Butter "	145,281,326	97,899,824	76,516,497	99,164,946	102,442,843
Cheese "	10,353,950	6,872,761	3,643,832	6,926,691	8,330,972
Egg albumen and yolk "	(a)	(a)	(a)	(a)	(a)
Eggs doz.	691,740	1,531,744	3,151,965	1,104,005	2,916,338
Feathers, undressed "	(a)	(a)	(a)	(a)	(a)
Honey lb.	137,116	113,401	402,745	281,090	83,418
Lard "	1,523,530	1,953,796	1,315,831	1,359,746	1,599,050
Meats—					
Bacon and Ham "	1,664,556	1,678,643	1,833,468	1,533,967	1,461,313
Frozen Poultry pair	10,898	22,381	19,980	9,570	12,419
Frozen Pork lb.	61,393	88,058	481,330	158,327	168,975
Milk, concentrated and preserved "	29,165,694	23,626,795	17,752,506	20,622,779	25,385,174
Pigs, living No.	65	320	418	328	201
Poultry, living "	2,057	3,418	1,833	2,569	2,116
VALUE.					
Beeswax £	60	131	29	346	149
Butter £	10,006,081	7,006,830	5,447,224	6,905,933	7,545,430
Cheese £	363,757	270,712	131,168	260,235	329,700
Egg albumen and yolk £		95	56	13	9
Eggs £	53,518	116,681	233,670	85,844	218,929
Feathers, undressed £	1,112	1,089	774	457	306
Honey £	3,807	3,756	9,157	6,912	2,856
Lard £	42,744	56,630	37,995	37,318	41,373
Meats—					
Bacon and Ham £	124,891	139,864	147,861	129,073	122,742
Frozen Poultry £	14,141	25,242	30,259	8,930	15,341
Frozen Pork £	2,749	3,579	16,608	6,152	6,773
Milk, concentrated and preserved £	1,694,230	1,261,417	1,080,963	1,188,504	1,424,313
Pigs, living £	676	1,951	2,506	1,294	934
Poultry, living £	1,527	2,311	1,281	1,817	1,757
Total	12,309,302	8,890,288	7,139,551	8,632,828	9,710,702

(a) Quantity not available.

§ 9. British Imports of Dairy Products.

1. Quantities and Values.—The following table gives the quantities and values of the principal dairy products imported into the United Kingdom during the years 1924 to 1928 :—

DAIRY PRODUCTS.—IMPORTS, UNITED KINGDOM, 1924 TO 1928.

Products.	1924.	1925.	1926.	1927.	1928.
Butter cwt.	5,287,244	5,853,245	5,818,840	5,818,611	6,112,972
" £	49,647,492	53,204,417	48,283,312	48,204,721	52,044,506
Cheese cwt.	2,887,413	3,098,702	3,014,055	2,949,082	3,005,237
" £	13,552,406	15,696,800	13,940,648	13,493,668	14,997,173
Milk, concentrated and preserved cwt.	2,333,701	2,413,350	2,556,890	2,684,019	2,907,225
" £	6,183,530	5,758,372	5,420,167	5,561,726	5,978,958
Bacon and ham cwt.	9,509,399	9,002,912	8,666,467	9,370,696	9,794,909
Pork (a) cwt.	45,050,619	50,774,719	50,146,958	43,333,082	44,957,403
" £	238,206	262,998	303,234	234,248	289,114
" £	952,057	1,133,648	1,396,714	912,271	1,014,253

(a) Frozen, chilled, and salted.

2. **Butter.**—(i) *Imports.* Australia has for many years supplied a large proportion of the butter imported into the United Kingdom. The quantity shipped in 1928 amounted to 872,885 cwt., or 14½ per cent. of the total importation. The Australian contribution was valued at £6,861,515, and was exceeded only by that shipped from Denmark and New Zealand.

BUTTER IMPORTS.—UNITED KINGDOM, 1928.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Denmark ..	2,016,045	18,613,677	Germany ..	3,033	25,188
New Zealand ..	1,222,277	10,228,352	United States of ..		
Australia ..	872,885	6,861,515	America ..	2,151	17,154
Irish Free State ..	559,167	4,529,496	Canada ..	1,646	13,805
Argentine Republic	366,015	2,894,473	Norway ..	428	4,126
Soviet Republics	336,252	2,656,372	Union of South ..		
Finland ..	198,883	1,737,023	Africa ..	..	..
Sweden ..	175,570	1,549,557	British Possessions,		
Netherlands ..	129,445	1,094,863	n.e.i. ..	618	3,551
Estonia ..	77,557	628,426	Foreign Countries,		
France ..	69,460	543,713	n.e.i. ..	2,548	19,012
Latvia ..	50,012	397,264			
Poland (including			Total ..	6,112,972	52,044,506
Dantzic) ..	28,980	226,939			

(ii) *London Prices.* The average price of the best quality Australian butter in London during the past ten years is shown in the following table:—

AUSTRALIAN BUTTER.—LONDON PRICES, 1917 TO 1928.

Year.	Average Top Price per cwt.	Year.	Average Top Price per cwt.
	s. d.		s. d.
1917	(a) 206 0	1923	184 6
1918	(b) 252 0	1924	189 6
1919	(b) 252 0	1925	184 0
1920	(b) 299 9	1926	169 6
1921	234 0	1927	169 6
1922	183 0	1928	171 0

(a) Proclaimed price. (b) Flat rate for all imported butter.

The surplus output of Australian butter was sold under contract to the British Government from 1st July, 1918, to 31st March, 1921, but thereafter it has been sold in the open market.

3. **Cheese.**—The value of cheese imported into the United Kingdom in 1928 was £14,997,173, of which £7,586,336 was received from New Zealand, and £4,904,247 from Canada. Small experimental shipments from Australia were made in 1908 and following years, fair prices being realized. The value of the imports from Australia during 1928 amounted to £368,117.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1928 at £44,957,403, the United Kingdom received imports to the value of £25,295,846 from Denmark, £5,874,712 from the United States, and £1,945,515 from Canada. The import from Australia was small, experimental shipments only having been made during recent years.

5. **Pork.**—The value of the United Kingdom imports of pork (frozen and salted only) was £1,014,253 in 1928. There was only a small importation from Australia, the bulk of the supplies being forwarded from New Zealand, the United States, and Argentine Republic.

6. **Other Products.**—There was practically no shipment to the United Kingdom from Australia of beeswax, poultry, game, lard, or honey, but frozen rabbits to the value of £367,835 and eggs to the value of £233,539 were received from Australia in 1928.

CHAPTER XIX.

FORESTRY.*

§ 1. Forestry.

1. *General*.—Economic forestry aims at the preservation and development of existing forest areas by safeguarding against fire and other destructive agencies, by expert supervision of the removal of timber, by judicious thinning, and by reafforestation of denuded areas with suitable new growths of local or exotic origin. It provides also for the continuance of an indispensable form of national wealth by the afforestation of available bare lands adapted to the growth of various timbers. Though large areas of virgin forests still remain in Australia, the inroads made by timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ring-barking”—are considerable, and it is not unlikely that climatological changes are caused thereby. It is stated that beneficial consequences follow on the planting of trees on denuded lands, or along eroding coasts, and that a forest covering beneficially regulates the effects of rainfall.

Successful planting of exotics in various parts of Australia has demonstrated that the climate is suitable for the cultivation of a large number of the most valuable and beautiful of the world's timber trees.

2. *Extent of Forests*.—(i) *Australia*. The wooded area of Australia contains a large number of xerophilous trees and woody shrubs which thrive in regions receiving less than 10 inches of rain per annum. Country devoid of tree growth is rare, the conditions being due to lack of suitable soil rather than lack of rainfall. Sand dunes, rock exposures, and clay pans are the most common treeless areas. A treeless region such as the 300 miles long Nullarbor plain is quite exceptional. There the lack of tree growth is due to the failure of the limestone formation to retain moisture. While, however, the major portion of Australia carries trees, and may be said to be well wooded (the term “desert” applying to relatively small areas only) dense forest is confined to a very narrow fringe. The savannah forests of the interior yield minor products such as sandalwood and tan barks, but do not produce timber. These open, park-like formations carry only scattered trees of low habit. The bulk of the commercial forest products comes from the thickly-timbered areas comprised in the 30-inch and over rainfall belt south of the Tropics, and the 70-inch and over rainfall belt in the Tropics. The total area is comparatively small, and is confined to the following districts:—(a) The coastal belt in the extreme south-west of Western Australia, from a little north of Perth to Albany; (b) the Otway country, in the south of Victoria, and the whole of the south-eastern portion of that State; (c) the mountain forests of Victoria and New South Wales. A forest fringe extends along the coast of New South Wales and Queensland, the rainfall rising from 30 inches in the south and temperate portion to 140 inches in the Tropics. The greater portion of Tasmania receives sufficient rainfall to carry high forest, but a very small area only in South Australia, and practically none in the Northern Territory are endowed with the necessary rainfall. Edaphic forests occur here and there, and the most important belt is probably that which is to be found on each side of the Murray River in New South Wales and Victoria. Red Gum (*E. rostrata*) is the riverine species. Practically the whole of Papua and New Guinea carry or have carried dense forests, the exceptions being certain small dry belts where the rainfall is less than 70 inches. Norfolk Island was, at one time, covered with a thick jungle.

Special articles relating to Australian Eucalyptus timbers and the chemical products of Eucalypts will be found in Official Year Book No. 10, pp. 85–98.

* A specially contributed article dealing with Forestry in Australia appeared as part of this chapter in Official Year Book No. 19 (*vide* pp. 701 to 712 therein).

Scientific surveys of the forests of the various States have not yet been completed, and there are, in consequence, conflicting reports regarding the total forest area of Australia. Expert foresters, however, estimate the forest area possible for permanent reservation at approximately 24,500,000 acres, distributed throughout the States as follows :—

ESTIMATED FOREST AREA.—AUSTRALIA.

State.						Total Forest Area.	Percentage on Total Area.
						Acres.	%
New South Wales	..	..	..	..	..	8,000,000	4.04
Victoria	..	..	..	..	..	5,500,000	9.78
Queensland	..	..	..	..	..	6,000,000	1.40
South Australia	..	..	..	..	..	500,000	0.21
Western Australia	..	..	..	..	..	3,000,000	0.48
Tasmania	..	..	..	..	..	1,500,000	8.94
Total	..	..	..	..	..	24,500,000	1.29

(ii) *Comparison with other Countries.* The absolute and relative forest areas of Australia and other countries are shown below :—

FOREST LANDS.—RELATIVE AREAS, VARIOUS COUNTRIES.

Country.	Total Wooded Area.	Percentage on Total Area.	Country.	Total Wooded Area.	Percentage on Total Area.
	Sq. Miles.	%		Sq. Miles.	%
Soviet Republics	2,662,000	37.81	Norway	27,434	21.95
Canada	965,234	26.78	Rumania	26,436	21.62
United States	724,150	24.35	Italy	21,309	17.81
India (British)	228,850	20.91	Spain	18,965	9.74
Sweden	90,889	57.35	Czecho-Slovakia	17,966	33.17
Japan	74,019	50.13	New Zealand	17,969	17.30
Finland	71,770	55.80	Austria	12,220	37.75
Germany	50,608	26.29	Latvia	7,027	27.70
France	39,873	18.74	Greece	5,844	11.71
Australia	38,281	1.29	United Kingdom	5,180	3.90
Poland	32,781	21.99			

3. *Requisite Proportion of Forest Area.*—It is generally held that when the proportion of forest in any country falls below 0.86 acres per head of the population, that country will be obliged to import timber. Australia possesses 4.01 acres of forest per head of population, and the excess of imports of timber over exports amounts to 28,000,000 cubic feet. There are two reasons for this excess. In the first place the area of 24,500,000 acres given as the wooded area comprises all forest lands, reproductive or otherwise. The bulk of this area consists of cut-over forests swept by fire at frequent intervals, and the area of really productive forests is not available. Secondly, Australia does not possess a surplus of softwoods, and must, therefore—with the exception of a small quantity produced in Queensland and northern New South Wales—import the bulk of its requirements from overseas. The figure 24,500,000 acres represents the total area that in the estimation of foresters should be reserved for forestry, and taking the factor of 0.86, then, when all the forest area of Australia has been brought under silvicultural treatment, and is yielding its maximum of hard and soft woods, and none is being imported, the timber supply of Australia would support a population of 28½ millions.

§ 2. Activities of the Commonwealth Government.

Forestry was not included amongst the matters transferred by the States to the control of the Commonwealth, and federal supervision, therefore, is restricted to the forests in the Commonwealth Territories. These territories cover a large area, and, with the exception of the Northern Territory, are capable of sound forestry development. It is only during the last few years, however, that any attempt has been made to take stock of the forestry position. Reports have been issued in regard to Papua, New Guinea, the Federal Capital Territory, and Jervis Bay, and a general policy has been drawn up for the management of the forests of these Territories. So far as co-operation with the States is concerned, there has been progress in a small way in connexion with the investigation of minor forest products. The Council for Scientific and Industrial Research, for example, has carried out valuable research work into the pulping qualities of Australian hardwoods and into the tanning qualities of barks and other material. It is proposed to enlarge the work of investigation into minor products, and, through the Forestry Bureau of the Commonwealth Government, to co-operate with the States in major forest work. The Forestry Bureau was instituted in 1925 and an Act passed in 1930 provided certain statutory powers. The Australian Forestry School was inaugurated in 1926. A qualified forester has been appointed to manage the forests at Canberra and Jervis Bay, while it is anticipated that in both New Guinea and Papua the forests will shortly be placed under scientific management.

§ 3. State Forestry Departments.

1. **Functions.**—Each State has organized a separate Department or Commission specially charged with the control and management of the State forests and timber reserves. Extensive survey work is carried on with a view to the classification of forest lands and the proclamation of State forests. The forests are improved by systematic cutting and scientific treatment, by judicious thinning and ring-barking, by the making of roads and the establishment of fire-breaks, and by the removal and destruction of debris, and stunted, diseased or suppressed growth. Provision is made for effective patrols in forest districts to check the ravages caused by fire, often due, it is believed, to carelessness. The training of forest officers, the conduct of research work, and the collection of forestry statistics are also undertaken.

2. **Forest Reservations.**—At the Interstate Conference on Forestry, held at Hobart in 1920, the forestry authorities of the various States agreed upon the necessity of reserving an area of 24,500,000 acres of indigenous forest lands to meet the future requirements of Australia. This area was distributed among the States as set out in § 1, 2 *ante*.

Having been endorsed by the Premiers' Conference held later in the same year, this area was adopted as the Australian forest ration towards which the authorities are now aiming for permanent reservation. The progress made in the various States to the end of June, 1929, is set out in the following table:—

AREA OF FOREST RESERVATIONS, 30th JUNE, 1929.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Dedicated State forests ..	5,255,635	4,348,940	1,796,172	2,267,797	2,974,344	1,252,893	15,895,781
Timber and fuel reserves ..	1,564,858	748,794	3,403,174	..	1,401,987	950,538	8,069,351
Total ..	6,820,493	5,097,734	5,199,346	2,267,797	4,376,331	2,203,431	23,965,132

(a) Includes Timber and Fuel Reserves.

In addition to the work of permanently reserving their respective quotas, the State foresters are concerned with the surveying of all forest lands and the excising of those unsuitable for forestry. During the year considerable areas were revoked in certain States, but dedications of new areas resulted in a gain of 1,140,424 acres to the permanent estate, the greatest increase occurring in Western Australia.

The area of State forests reserved in perpetuity amounted in June, 1929, to 15,895,781 acres, or 64.9 per cent. only of the quota adopted for Australia. Of this area a considerable proportion consists of inaccessible mountainous country and cut-over lands, while the Australian quota recommended refers to merchantable forest only. The foresters of Australia are, therefore, faced with a difficult task in improving and preserving the existing forests, and in securing the reservation of further suitable forest country to ensure a permanent supply of accessible timber.

The Forestry Departments also control 8,069,351 acres of temporary timber and fuel reserves, but although these areas contain some land of high value for forestry purposes, the greater proportion thereof is not of importance for permanent reservation.

3. Sylvicultural Nurseries and Plantations.—Recognition of the necessity for systematic sylviculture has led to the creation in all of the States of a number of sylvicultural nurseries and plantations. The locality of these establishments, together with a brief statement of the nature of their activities, is given in previous issues of the Year Book. (Reference may be made to Official Year Book No. 6, pp. 451–3.) Details regarding forest plantations and employment are given hereunder :—

SYLVICULTURAL PLANTATIONS AND FORESTRY EMPLOYMENT, 1928–29.

Particulars.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tas. mania.	Total.
Total area of Effective Plantations—							
Softwoods .. Acres	19,780	18,800	3,874	28,760	4,110	780	76,104
Hardwoods .. Acres	..	2,478	423	9,110	..	..	12,011
Number of persons employed in Forestry Departments—							
Office Staff .. No.	45	37	72	14	35	4	207
Field Staff .. No.	85	137	176	10	(a)402	6	816

(a) Including 343 casual hands.

4. Revenue and Expenditure.—The revenue and expenditure of the State Forestry Departments from 1924–25 to 1928–29 are given below :—

FORESTRY DEPARTMENTS.—REVENUE AND EXPENDITURE, 1924–25 TO 1928–29.

State.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
REVENUE.					
	£	£	£	£	£
New South Wales	209,732	224,207	224,943	226,667	210,743
Victoria	162,792	161,608	156,700	140,715	129,684
Queensland	246,641	224,728	250,881	462,383	414,515
South Australia	22,905	19,418	24,376	37,586	34,666
Western Australia	182,764	227,061	222,507	228,614	191,023
Tasmania	20,757	20,715	18,600	17,790	14,810
Total	845,591	877,737	898,007	1,113,755	995,441
EXPENDITURE.					
	£	£	£	£	£
New South Wales	153,722	178,490	207,099	212,858	194,069
Victoria	199,575	274,732	320,217	285,271	240,191
Queensland	60,542	72,236	69,262	277,534	174,407
South Australia	43,459	53,977	120,036	105,279	166,903
Western Australia	86,739	101,321	103,319	125,745	157,827
Tasmania	11,435	13,007	12,098	11,017	8,895
Total	555,472	693,763	832,031	1,017,704	942,292

5. **Instruction in Scientific Forestry.**—Early in 1925 the Commonwealth Government assumed the responsibility of establishing a national forestry school, and the States agreed to nominate a certain number of students annually. The school, which opened with eighteen students in March, 1926, was housed for the first year at Adelaide University, but early in 1927 it was transferred to Canberra, the Federal Capital City. Applicants for entrance must be graduates of an Australian University or matriculated students who have completed a minimum University course of two years in science. The school provides a two years' course in pure forestry, and successful students are awarded the Commonwealth Forestry Diploma. It is anticipated that the institution will supply the States with foresters qualified to undertake all necessary forestry work, and that it will constitute a nucleus of forest knowledge designed to develop on sound lines the silviculture of Australia.

6. **Forest Congresses.**—Reference to the various Forestry Conferences held in Australia and elsewhere will be found in Official Year Book No. 22, p. 743, but, owing to limitations of space, the information cannot be repeated herein.

§ 4. Production.

1. **Timber.**—Estimates of the quantity of local timber sawn and hewn in the saw-mills of the various States are given hereunder :—

SAWMILL OUTPUT OF NATIVE TIMBER, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. ft.
New South Wales	162,423	169,991	162,891	146,575	(c) 136,051
Victoria	114,705	109,534	115,813	100,567	79,018
Queensland	143,623	131,662	122,311	102,192	106,862
South Australia	3,981	3,362	3,971	4,833	3,219
Western Australia	(a) 189,019	(b) 271,662	156,087	163,180	145,043
Tasmania	50,799	53,588	52,058	53,174	46,195
Total	664,550	739,799	613,131	570,521	516,388

(a) Year ended 31st December. (b) Figures for eighteen months ended 30th June, 1926.

(c) Excluding 892,285 cubic feet of round timber and 926,101 sleepers.

In addition to the timber shown above for Western Australia, the following quantities were hewn by contractors for the Railway Department, Mines, etc., or were sawn in establishments other than forest sawmills during the past five years :—1924-25, 18,118,199 sup. feet; 1925-26, 57,272,898 sup. feet; 1926-27, 73,107,815 sup. feet; 1927-28, 64,451,395 sup. feet; and 1928-29, 29,281,146 sup. feet.

2. **Other Forest Products.**—(i) *Eucalyptus Oil*. Oil may be distilled from the foliage of all varieties of eucalyptus, and several of them furnish a product widely known for its commercial and medicinal uses. Complete information regarding Australian production and consumption of eucalyptus oil is not available, but large quantities are

manufactured, particularly in Victoria. Oversea exports amounted in 1924-25 to £75,763, in 1925-26 to £73,023, in 1926-27 to £63,284, in 1927-28 to £90,729, and in 1928-29 to £35,009, the bulk of the product being shipped from Victoria to the United Kingdom, the United States, and Germany. Large quantities of the crude oil are used locally in flotation processes at the mines.

(ii) *Tan Barks.* The forests of Australia contain a wealth of tanning materials, all the eucalypts being capable of furnishing a percentage of tannin. The principal source of supply in Australia is obtained from the golden and the black or green wattle, and in pre-war days the production was more than sufficient for local requirements, and an export trade was built up. The supply is, however, diminishing, and since 1922-23 Australia has imported on the average about 2,900 tons each year from Natal, where the plantations were originally started from Australian seed. During the year 1928-29, however, the excess of exports over imports amounted to 2,762 tons, valued at £33,043, the chief exporting State being South Australia, where the quantity exported amounted to more than 1,000 tons, as compared with 77 tons for the previous year. In addition to the wattle bark, a valuable tan bark is obtained from the mallet (*E. occidentalis*) of Western Australia. This bark is not extensively used in Australian tanneries, but is exported to Europe and other countries, where it is used for producing a tannin extract. A brief account of the work done by the Council of Scientific and Industrial Research in connexion with tanning materials will be found in Official Year Book No. 22, p. 743. The production of tan bark in Australia is estimated at about 27,000 tons per annum.

3. Value of Production.—Though the valuation of the quantity of firewood consumed in Australia presents serious difficulty, an estimate of the total value of forest production is compiled annually, with the following results for the past five years :—

VALUE OF FOREST PRODUCTION.—AUSTRALIA, 1924-25 TO 1928-29.

Production.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Total ..	10,577,000	10,964,000	11,046,000	10,339,000	9,450,000

§ 5. Commercial Uses of Principal Australian Timbers.

1. General.—The uses of the more important Australian timbers are many and various, and are indicated in previous issues of this work. (See Official Year Book No. 6, pp. 454-6; and Official Year Book No. 10, Section III., § 7 and 8.)

A list of Australian timbers best known on the local markets appeared in Official Year Book No. 20, p. 713.

2. Lack of Uniformity in Nomenclature.—Unfortunately the vernacular names applied to the gums, ironbarks, etc., in the various States, and even in different parts of the same State, do not always refer to identical timbers. The resulting confusion has not only been productive of loss, but it has, to some extent, prejudicially affected the timber trade. This subject is referred to at some length in the special article "Australian Eucalyptus Timbers," in Section III., § 7 and 8, in Official Year Book No. 10. At the Forestry Conferences alluded to above, the matter came up for special consideration, and steps were taken to establish a uniform nomenclature.

§ 6. Oversea Trade.

1. Imports.—(i) *Dressed Timber*. The quantity and value of timber imports into Australia during the four years 1925–26 to 1928–29 inclusive are shown according to countries of origin in the following tables :—

DRESSED TIMBER.—IMPORTS, AUSTRALIA, 1925–26 TO 1928–29.

Country of Origin.	Quantity.				Value.			
	1925–26.	1926–27.	1927–28.	1928–29.	1925–26.	1926–27.	1927–28.	1928–29.
	sup. feet.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ..	5,343	157,061	39,790	8,117	342	1,928	1,734	303
Canada ..	6,367,054	6,399,263	8,271,122	7,361,669	60,942	67,524	95,831	80,590
Other British Countries	46,477	57,513	21,823	212,733	1,079	700	490	2,124
Norway ..	41,419,031	44,103,595	21,397,756	36,184,991	506,705	487,284	258,707	391,159
Sweden ..	43,282,827	38,304,718	45,084,605	25,934,266	485,867	425,896	497,606	290,814
United States ..	15,303,997	7,561,278	6,878,065	7,851,388	161,674	78,504	65,002	86,289
Other Foreign Countries	1,460,169	1,405,503	1,636,579	358,136	22,419	24,143	25,209	7,312
Total ..	107,884,898	97,988,931	83,329,740	77,911,300	1,239,028	1,085,979	944,579	858,591

The figures in the table above are exclusive of items such as architraves, veneers, etc., quantities for which are either not shown, or are expressed in dissimilar units in the Customs entries. The total value of the items so excluded amounted to £247,066 in 1928–29, including plywood, veneered or otherwise, £171,218.

The bulk of the imports of dressed timber comes from Norway, Sweden, and the United States. Practically the whole of this timber consists of softwoods—deal and pine—used for lining, weatherboards, flooring, shelving, doors, box-making, etc.

(ii) *Undressed Timber*. Australian imports of undressed timber for the latest available four years are given hereunder :—

UNDRESSED TIMBER, INCLUDING LOGS (a).—IMPORTS, AUSTRALIA, 1925–26 TO 1928–29.

Country of Origin.	Quantity.				Value.			
	1925–26.	1926–27.	1927–28.	1928–29.	1925–26.	1926–27.	1927–28.	1928–29.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	132,230	53,568	1,540,112	502,310	3,362	3,557	15,248	10,496
Canada ..	21,433,364	16,488,751	29,247,286	12,199,691	168,515	137,380	240,233	97,384
India ..	396,877	317,602	509,256	442,651	12,860	14,256	17,252	14,246
Malaya (British)	220,411	172,121	165,788	149,388	2,168	1,540	1,372	2,113
New Zealand ..	49,626,921	37,370,304	85,635,337	37,320,809	671,165	551,461	436,648	484,856
Other British Countries	1,567,528	2,563,920	1,888,052	2,926,161	15,354	20,460	16,778	28,567
Japan ..	6,895,043	8,365,463	7,502,972	7,512,930	136,835	176,516	165,149	146,576
Netherlands East Indies	1,252,129	377,217	882,892	1,582,775	9,649	3,124	5,273	9,301
Norway ..	787,576	365,855	307,450	565,474	7,916	4,021	3,188	6,676
New Caledonia ..	2,313,790	2,058,738	2,276,101	1,461,433	15,393	16,998	20,334	12,719
Philippine Islands	8,822,160	4,382,704	4,041,218	3,943,533	147,881	75,333	59,614	60,056
Sweden ..	6,465,812	3,716,748	4,690,710	3,512,165	60,643	36,428	45,711	33,576
United States ..	288,943,456	289,897,409	340,466,618	250,803,732	2,517,746	2,388,678	2,697,717	2,144,665
Other Foreign Countries	3,162,154	1,689,851	2,698,764	165,646	25,624	25,662	29,821	3,366
Total ..	392,019,451	367,820,251	431,852,556	323,088,698	3,795,111	3,455,414	3,754,288	3,054,597

(a) Exclusive of timber not measured in super. feet.

By far the larger proportion of the undressed timber imports consists of softwoods such as yellow pine, redwood, and oregon from the United States of America and Canada; kauri, rimu, and white pine from New Zealand; pine from Japan, and red deals from Norway and Sweden. Amongst the hardwoods imported, the principal are oak from the United States of America and Japan, and teak from India.

2. Exports.—The quantity and value of undressed timber exported from 1924–25 to 1928–29 are given below, the countries of destination being also shown :—

UNDRESSED TIMBER, INCLUDING LOGS (a).—EXPORTS, AUSTRALIA, 1924–25 TO 1928–29.

Country to which Exported.	Quantity.					Value.				
	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£	£
United Kingdom ..	1,000	1,000	1,000	1,000	1,000	192,744	107,951	87,409	85,024	104,314
Canada ..	17,589	10,718	8,332	7,751	9,191	4,272	6,537	4,147	4,338	10,226
Ceylon ..	201	302	183	213	520	44,798	100,536	98,950	67,656	46,051
Hong Kong ..	4,822	8,385	8,745	6,679	4,069	1,618	12,568	2,818	5,813	5,813
India ..	1,230	7,920	12,971	10,946	6,124	79,890	130,772	119,102	70,202	70,202
Malaya (British) ..	2,448	67	6,575	4,840	574	25	67,347	49,879	5,745	5,745
Mauritius ..	46,318	31,750	28,793	18,350	23,041	680,802	424,214	369,920	262,422	308,057
New Zealand ..										
Pacific Islands—										
Fiji ..	781	1,077	1,096	1,480	1,155	13,286	17,230	17,668	23,484	18,932
Territory of New Guinea ..	239	509	293	489	650	4,483	8,038	5,434	8,835	10,898
Other Islands ..	715	937	997	1,027	(b) 1,008	16,520	17,471	18,293	18,260	(b) 16,515
Papua ..	405	357	419	247	136	7,197	7,244	9,736	4,818	2,709
South African Union ..	51,902	47,130	50,278	41,519	24,981	558,511	527,188	554,298	467,922	269,522
Belgium ..	2,182	157	207	82	1,230	21,819	1,478	2,259	862	12,579
China ..	4	1,703	2,175	5	2,006	197	17,032	21,787	77	20,521
Egypt ..	66	518	19	355	5	664	5,156	192	3,793	5
Japan ..	50	35	7	219	...	742	618	155	3,380	...
Pacific Islands—										
New Caledonia ..	76	40	15	12	33	1,450	990	281	233	642
Other Islands ..	124	83	140	176	309	2,079	1,717	2,433	2,979	4,674
U.S. of America ..	469	846	800	1,480	6,427	12,169	20,131	18,160	26,313	105,352
Other Foreign Countries ..	433	501	1,361	1,786	9,211	5,855	6,377	15,182	19,757	96,928
Total ..	130,004	113,185	124,654	99,008	92,006	1,602,272	1,352,550	1,440,379	1,182,603	1,125,494

(a) Exclusive of timber not measured in super. feet. (b) Includes other British Countries, 4,850 sup. feet, £94.

As the table shows, the bulk of the exports of undressed timber was consigned to South Africa, New Zealand, India, and the United Kingdom, and consisted largely of the Western Australian hardwoods, jarrah and karri, which have earned an excellent reputation for such purposes as railway sleepers, harbour works, wood paving, etc.

3. Classification of Imports and Exports.—(i) General. The quantities of timber classified according to varieties imported and exported during the year 1928–29 are given in the next table :—

TIMBER, VARIETIES IMPORTED AND EXPORTED.—QUANTITIES, AUSTRALIA, 1928–29.

Description.	Unit of Quantity.	Imports.	Exports.	Excess of Imports over Exports.
Dressed ..	Sup. ft.	77,911,300	661,870	77,249,430
Undressed, including logs ..	"	323,088,698	92,605,986	230,482,712
Architraves, mouldings, etc. ..	lin. ft.	834,173	67,320	766,853
Plywood, veneered or otherwise ..	sup. ft.	11,112,733	(b)	11,112,733
Palings ..	No.	..	179,230	—179,230
Pickets ..	"	12,919	630	12,289
Shingles ..	"	4,648,301	..	4,648,301
Staves—				
Dressed, etc. ..	"	518,580	2,424	516,156
Undressed ..	"	886,574	..	886,574
Laths—				
For blinds ..	"	(a)	(a)	(a)
Other ..	"	7,323,690	..	7,323,690
Doors ..	"	9,343	(a)	(a)
Wood pulp ..	ton	11,966	(b)	11,966
Veneers ..	—	(a)	(b)	(a)
Spokes, rims, felloes, etc. ..	—	(a)	(a)	(a)
Other ..	—	..	..	..

(a) Quantity not available. (b) Exports not recorded separately.
NOTE.—The minus sign — denotes an excess of exports.

Similar particulars relative to the values of imports and exports during the year 1928-29 are shown hereunder :—

TIMBER, VARIETIES IMPORTED AND EXPORTED.—VALUES, AUSTRALIA, 1928-29.

Description.	Imports.	Exports.	Excess of Imports over Exports.
	£	£	£
Dressed	858,591	14,735	843,856
Undressed, including logs	3,054,597	1,125,494	1,929,103
Architraves, mouldings, etc.	7,336	449	6,887
Plywood, veneered or otherwise	171,218	(a)	171,218
Palings .. .. .	..	1,932	-1,932
Pickets	97	6	91
Shingles	7,124	..	7,124
Staves—			
Dressed, etc.	30,583	136	30,447
Undressed	10,994	..	10,994
Laths—			
For blinds .. .. .	..	..	..
Other	10,604	..	10,604
Doors	4,405	1,768	2,637
Wood pulp	151,838	(a)	151,838
Veneers	31,277	(a)	31,277
Spokes, rims, felloes, etc.	1,851	2,509	-658
Other	5,500	..	5,500
Total	4,346,015	1,147,029	3,198,986

NOTE.—The minus sign — denotes an excess of exports.

(a) Exports not recorded separately.

(ii) *Sandalwood.* A considerable amount of sandalwood is annually exported principally from Western Australia to Hong Kong and China, where it is highly prized, and largely used for artistic and ceremonial purposes. Particulars for the past five years are as follows :—

SANDALWOOD.—EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Country to which Exported.	Quantity.					Value.				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	ton.	ton.	ton.	ton.	ton.	£	£	£	£	£
United Kingdom ..	..	1	25	..	..	..	7	858	..	..
Hong Kong ..	3,811	5,063	3,984	4,856	5,432	113,551	155,139	116,408	142,890	156,086
India ..	406	341	246	314	352	11,574	12,384	8,871	11,434	12,310
Malaya (British) ..	725	567	346	397	150	27,321	18,340	10,784	13,610	4,418
Other British Countries ..	..	1	12	13	333	..	53	533	470	594
China ..	1,722	2,255	3,991	822	3,486	53,031	66,639	114,626	25,170	103,485
Other Foreign Countries ..	..	7	11	46	50	..	245	411	1,052	1,345
Total ..	6,664	8,235	8,615	6,448	9,470	205,477	252,807	252,491	194,626	278,238

(iii) *Tan Bark.* Tan bark figures both as an export and import in the Australian trade returns, as the following tables show. The first table refers to exports:—

TAN BARK.—EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Country to which Exported.	Quantity.					Value.				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom	48	104	..	1,505	11,153	48	58	..	922	5,488
New Zealand ..	4,061	1,008	1,633	27,070	17,934	2,372	701	1,355	21,431	12,496
Other British Possessions ..	332	..	102	22	20	170	..	51	11	12
Germany ..	36,081	303	2,050	15,414	26,466	19,587	159	1,272	10,086	15,256
Other Foreign Countries ..	2,272	5,033	2,150	2,538	1,231	1,155	2,900	1,332	1,061	546
Total ..	42,794	6,448	5,935	46,549	56,804	23,332	3,813	4,010	33,511	33,798

The exports of tan bark from Australia during the past five years consisted largely of mallet bark from Western Australia. The shipments of this bark, exported mainly to Germany, are not so large as in pre-war days, owing to the cutting out of supplies. A considerable improvement, however, was shown during the year 1928-29. New Zealand took 37 per cent. of the total exports, which were sent chiefly from South Australia.

A comparison of the imports and exports of tan bark during the last five years is given in the next table:—

TAN BARK.—IMPORTS AND EXPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	cwt.	cwt.	cwt.	cwt.	cwt.
QUANTITIES—					
Imports	28,628	44,372	57,302	5,114	1,562
Exports	42,794	6,448	5,935	46,549	56,804
Excess of exports over imports	14,166	—37,924	—51,367	41,435	55,242
VALUES—	£	£	£	£	£
Imports	11,821	21,498	27,680	2,633	755
Exports	23,332	3,813	4,010	33,511	33,798
Excess of exports over imports	11,511	—17,680	—23,670	30,878	33,043

NOTE.—The minus sign — denotes excess of imports.

The imports consist almost exclusively of wattle bark from the plantations in South Africa. One variety of Australian wattle is found to flourish in the sandy belts near the coast, but it is the *Acacia decurrens*, var. *mollis*, which is chiefly relied upon for the production of wattle bark in the South African plantations. Seed has been tried from New South Wales, Tasmania, and Victoria, but it is stated that most of the seed is obtained from the best wattle bark areas in eastern Tasmania and western Victoria.

Two reasons are given to account for the success of the industry in South Africa. (a) It is found that the treeless, grassy highlands of Natal are specially suitable for wattle culture, and the trees can therefore be grown in rows and economically attended to, while the necessary bark sheds and other appurtenances can be placed in the most advantageous positions. (b) There is an abundance of cheap and efficient native labour available for employment on the plantations.

Considerable quantities of tanning substances other than bark are annually imported into the Commonwealth. The total value of the importations in 1928-29 was £63,369, and was composed as follows:—Wattle bark extract, £1,191; quebracho extract, £9,597; other extract, £18,739; and valonia, myrobalans, cutch, etc., £33,842.

CHAPTER XX.

FISHERIES.*

§ 1. General.

1. **Fish Stocks.**—Australia possesses an abundant and varied fish fauna, which embraces both tropical and temperate varieties and includes destructive as well as valuable species. In rivers and lakes both indigenous and imported varieties thrive. The latter have been introduced and acclimatized for industrial and sporting purposes by Governments and angling societies. Exploitation of the fishing areas—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, forbidden; proclaimed localities are closed against net-fishing, and a minimum size of mesh for nets is fixed. The sea-fishermen in some districts have made regulations in their own interests for the purpose of controlling the market supply.

2. **Progress of Industry.**—(i) *Transport and Marketing.* Despite the abundance of edible fish, the progress of the fishery industry in Australia has been slow, and transport and marketing of the proved supplies have not been satisfactorily dealt with.

In New South Wales, as shown in § 5 herein and § 6 of this Chapter in Official Year Book No. 17, the matter of exploiting trawlable fish was undertaken by the State Government, which also took steps to improve the conditions under which ordinary coastal fishing is carried on. In Queensland, State trawling was undertaken in 1919, and good trawling areas have been located and charted between Cape Moreton and Caloundra.

(ii) *Economic Investigations.* Although valuable work has been carried out by the State Governments in the way of experiment and culture, much yet remains to be done before the industry is at all commensurate in extent with the industrial progress or consuming capacities of the Commonwealth. All live fish imported into Australia are examined on shipboard in order to prevent the importation of undesirable fish. With the object of ascertaining the movements of oceanic fishes, and of estuarine fishes which make periodical oceanic migrations, reports are furnished regarding the various kinds of fishes, etc., and their movements along the coast. Details regarding the activities of the States in fish-culture were given in Official Year Book No. 6, pp. 471–2. By arrangement with the Commonwealth Fisheries Department some years ago members of the staff of the Australian Museum, Sydney, accompanied the F.I.S. *Endeavour* on various cruises. Specimens were collected, mounted for scientific purposes, and distributed to other Australian Museums, a considerable number being put aside for the Commonwealth Fishery Museum. As pointed out in § 4, however, this vessel was lost with all hands in 1914, and has not since been replaced.

With the object of reviewing the potentialities of the fishing industry of Australia the Development and Migration Commission convened a meeting of State and Commonwealth representatives. The Conference, which was held in Melbourne during September 1927, affirmed:—

- (1) The importance of establishing a Marine Biological Institution to study the scientific problems connected with Australian fisheries, and to collect and disseminate authoritative information and give advice on matters concerning the fisheries.
- (2) The desirability of establishing an experimental trawling unit to explore the fisheries resources of Australia.

Committees were formed to deal with important problems concerning the preservation, transportation, marketing, and distribution of fish, canning and curing of fish, the production of fish by-products, factors of destruction in fisheries, the development of the oyster industry, etc. The reports submitted by these Committees to a further conference held in July, 1929, were adopted and forwarded to the Federal and State Governments with a recommendation that the necessary action be taken to carry out the procedure outlined therein.

3. **Consumption of Fish.**—It has been said that the Australians are not an "ichthyophagous" race, seeing that the annual consumption of fish per head of

* A specially contributed article dealing with the Marine and Fresh Water Fisheries of Australia appeared as § 6 of this Chapter in Official Year Book No. 17 (*vide* pp. 752 to 767 therein).

population in Great Britain is set down at 42 lbs., while in Australia it has been estimated at only 13 lbs. The heavy imports of dried and preserved fish indicate, however, that there is scope for the development of the industry, which now seems to be ill-managed, the price to the consumer being high, while the fisherman's gain is uncertain, and the system of distribution lacks method.

4. **Oyster Fisheries.**—Natural oyster beds exist on the foreshores in the shallow waters of inlets and estuaries in several parts of Australia. By husbanding the natural crop and by judicious transplanting, the output has been very materially augmented. The areas are leased by the Government to private persons, lengths of foreshore being taken up under oyster leases. In New South Wales and Queensland the industry has thriven, and small yields are obtained in South Australia, Victoria, and Tasmania.

5. **Pearl-Shell, Pearls, Bêche-de-Mer, etc.**—(i) *General.* Pearl-shelling is carried on in the tropical waters of Queensland, the Northern Territory, and Western Australia. The pearl-oyster inhabits the northern and western coastal waters from Cape York to Shark Bay, a length of shore of over 2,000 miles. The shells are marketed in considerable quantities, and pearls are obtained in Queensland, Western Australia and the Northern Territory. The fishing is generally conducted with the aid of diving apparatus in water varying from 4 to 20 fathoms in depth. In Queensland and the Northern Territory the bêche-de-mer industry is carried on, and tortoise-shell is obtained on the coasts. Experiments have been made in cultivating the pearl-oyster on suitable banks. In October, 1911, a pearl weighing 178 grains, and valued at £3,000, was obtained at Broome. Further details regarding pearl-shelling are given in Official Year Book No. 6, p. 463. Trochus-shell to the value of £72,812, £76,116 and £71,714 was exported from Australia during 1926-27, 1927-28 and 1928-29 respectively.

(ii) *Royal Commission on Pearl-shelling Industry.* In accordance with the "White Australia" policy it was originally determined that the employment of Asiatic labour in the pearl-shelling industry should be restricted, and ultimately cease, and it was proposed that after 31st December, 1913, permits to bring in Asiatics for the pearling-fleet should no longer be issued. In view, however, of the disorganization of the industry occasioned by the war, the time was extended to the 30th June, 1918, after which date permits to introduce Asiatic labour were to be granted only in cases where the diver and tender of a boat were Europeans. The Royal Commission appointed in March, 1912, presented its final report in 1916. The Commissioners stated that, though it might be practicable, they did not consider it advisable or profitable to attempt to transfer the industry from Asiatics to Europeans. They further stated that, while the labour now employed is almost entirely Asiatic, they did not consider that the "White Australia" policy would be weakened or imperilled by allowing the industry to continue as at present conducted.

§ 2. The Fishing Industry.

1. **Boats and Men Engaged, and Take.**—(i) *General Fisheries.* The returns have been compiled from particulars supplied by the State Departments, and while the data do not generally lend themselves to presentation on a uniform basis, the principal facts have been incorporated in the tables hereunder:—

GENERAL FISHERIES, 1928.

State or Territory.	No. of Boats Engaged.	Value of Boats and Equip- ment.	No. of Men Em- ployed.	Total Take of—		Value of Take.	
				Fish.	Spiny Lobster (Crayfish).	Fish.	Spiny Lobster (Crayfish).
	No.	£	No.	cwt.	doz.	£	£
New South Wales ..	2,257	254,617	3,347	228,014	18,553	638,440	c115,954
Victoria ..	907	128,700	1,410	83,690	12,153	230,019	12,451
Queensland ..	846	59,150	1,636	74,700	d 9,514	e147,518	d 10,537
South Australia ..	701	70,100	1,295	b 90,960	(a)	b250,000	(f)
Western Australia	264	57,255	559	37,213	13,116	104,196	6,558
Tasmania ..	234	54,634	345	32,000	18,964	64,105	10,390
Northern Territory	4	640	8	372	..	1,149	..
Total ..	5,213	625,096	8,600	546,949	72,300	1,435,427	155,890

(a) Not available. (b) Estimate. (c) Including £92,300, the value of 13,136 cwt. prawns and 2,340 dozen crabs. (d) Crabs. (e) Including 435 turtles valued at £850. (f) Included with fish.

Returns for the past five years are given in the table below :—

GENERAL FISHERIES.—AUSTRALIA, 1924 TO 1928.

Particulars.	1924.	1925.	1926.	1927.	1928.
No. of boats engaged	4,346	4,399	4,940	4,843	5,213
No. of men employed	7,885	7,786	7,745	7,987	8,600
Fish obtained—					
Quantity cwt.	a345,012	a341,133	403,156	443,984	546,949
Value £	a882,042	a909,032	1,059,039	1,139,218	1,435,427
Lobsters obtained—Value	£ a75,893	a103,338	a108,092	a140,439	a 155,890

(a) Exclusive of South Australia.

(ii) *Edible Oyster Fisheries.* The returns from oyster fisheries are given in the next table.

EDIBLE OYSTER FISHERIES, 1928.

State or Territory.	Number of Boats Engaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Number of Leases.	Oysters Taken.	
					Quantity.	Value.
	No.	£	No.	No.	cwt.	£
New South Wales	745	36,364	674	5,322	50,798	94,833
Victoria	7	809	11	6	15	45
Queensland	75	5,814	123	535	13,058	21,220
South Australia (a) .. ..	..	..	..	..	..	..
Western Australia .. ..	..	..	..	..	..	..
Tasmania	7	1,160	24	1	1,080	(c) 5,220
Northern Territory	1	250	1	1	40	40
Total (b)	835	44,397	833	5,865	64,991	121,358

(a) Included with General Fisheries.

(b) Exclusive of South Australia.

(c) Including £4,500, value of scallops.

Returns for Australia for the last five years are given in the appended table :—

EDIBLE OYSTER FISHERIES.—(b) AUSTRALIA, 1924 TO 1928.

Particulars.	1924.(a)	1925.(a)	1926.	1927.	1928.
No. of boats engaged	725	741	1,351	813	835
No. of men employed	805	709	752	790	833
Oysters obtained—					
Quantity cwt.	67,302	77,990	65,992	67,422	64,991
Value £	113,623	133,161	125,084	129,215	121,358

(a) Exclusive of Tasmania.

(b) Exclusive of South Australia.

(iii) *Pearls, Pearl-shell and Trepang.* Figures regarding the production, trade, etc., for these items, so far as they are ascertainable, are given hereunder. As regards pearls, for obvious reasons no correct estimate can be obtained of the value of those found. Pearl-shell (*Margaritifera*) is widely distributed in North Australian waters over an area facing some thousands of miles of coastline, though not intensively over the whole distance. The north-west beds are the most prolific, but those around and to the north of Cape York are also of importance. There is need for further investigation into the occurrence of this valuable shell, as well as of trochus, green snail, window-pane shell (*Placuna*), the various types of trepang or bêche-de-mer (*Holothuria*), both in tropical Australian waters and those of Papua and the mandated area of New Guinea. Particulars as returned for the year 1928 are as follows :—

PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, (a), 1928.

State or Territory.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Quantity of Pearl-shell obtained.	Value of Pearl-shell obtained.	Value of Pearls obtained. (b)	Value of Bêche-de-mer obtained.	Value of Tortoise shell obtained.
	No.	£	No.	Tons.	£	£	£	£
Queensland (c) ..	129	85,000	1,109	1,085	161,502	7,195	16,449	1,643
Western Australia ..	140	73,462	946	923	146,487	22,420	296	496
Northern Territory	38	35,000	352	204	37,238	..	1,148	2
Australia ..	307	193,462	2,407	2,212	345,227	29,615	17,893	2,141

(a) No pearl-shelling industry in New South Wales, Victoria, South Australia, and Tasmania.

(b) Incomplete; as returned. (c) Also trochus-shell to the value of £60,219.

The figures for tortoise-shell and trochus-shell as returned are defective, as the necessary information is not collected in full detail. In the following summary of production during the past five years, export figures of Australian origin are inserted for both of these items :—

PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES.—AUSTRALIA, 1924 TO 1928.

Particulars.	1924.	1925.	1926.	1927.	1928.
No. of boats engaged ..	387	416	348	297	307
No. of men employed ..	3,043	3,347	2,893	2,062	2,407
Pearl-shell obtained—					
Quantity .. tons	2,784	2,602	2,098	2,243	2,212
Value £	444,234	362,285	302,848	332,739	345,227
Pearls obtained (a) —					
Value £	59,670	65,095	39,655	22,863	29,615
Bêche-de-mer obtained—					
Quantity .. tons	(b)	(b)	(b)	(b)	(b)
Value £	25,757	13,535	31,186	14,693	17,893
Tortoise-shell exported—					
Value £	2,025	4,730	3,364	2,894	3,113
Trochus-shell exported—					
Value £	47,892	76,280	72,812	76,116	71,714

(a) Incomplete; as returned. (b) Not returned.

2. Fish Preserving.—To encourage the industry, the Federal Parliament provided a bounty of $\frac{1}{2}$ d. per lb. for fish preserved as prescribed during the ten years 1907–8 to 1916–17. The payment, which amounted to only £3,005 during the period, or at the rate of £300 per annum, failed to develop the industry, and the bounty was not renewed on its expiration in 1916–17.

3. State Revenue from Fisheries.—The revenue from fisheries in each State during the year 1928 is given hereunder :—

FISHERIES.—REVENUE, 1928.

State or Territory.	Licences.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ..	1,505	12,197	426	377	14,505
Victoria	683	33	367	..	1,083
Queensland	3,133	2,880	67	49	6,129
South Australia ..	1,673	..	..	11	1,684
Western Australia ..	2,693	1,277	149	261	4,380
Tasmania	3,112	110	207	62	3,491
Northern Territory ..	65	1	..	..	66
Total	12,864	16,498	1,216	760	31,338

Similar particulars for Australia for the last five years are given in the following table :—

FISHERIES.—REVENUE, AUSTRALIA, 1924 TO 1928.

Particulars.	1924.	1925.	1926.	1927.	1928.
	£	£	£	£	£
Licences	9,551	12,557	9,890	11,769	12,864
Leases	15,944	15,927	16,439	16,531	16,498
Fines and Forfeitures ..	1,018	781	841	748	1,216
Other Sources	905	1,321	1,477	739	760
Total	27,418	30,586	28,647	29,787	31,338

§ 3. Oversea Trade in Fishery Products.

1. Imports of Fish.—The development of the local fishing industry leaves much to be desired, as is evident from the large imports. For the last five years the imports were as follows :—

FISH.—IMPORTS, AUSTRALIA, 1924-25 TO 1928-29.

Classification.		1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Fresh (oysters) ..	cwt.	1,646	2,899	2,115	1,488	1,308
	£	1,222	2,228	1,699	1,157	958
Fresh, or preserved by cold process	cwt.	64,409	69,855	61,151	75,835	72,866
	£	197,690	205,163	180,773	232,894	221,999
Potted	cwt.	(a)	(a)	(a)	(a)	(a)
	£	110,347	130,969	146,782	148,424	158,797
Preserved in tins..	cwt.	226,263	228,226	268,463	209,791	252,379
	£	1,120,428	1,164,223	1,418,103	1,141,493	1,265,510
Smoked, dried, and n.e.i.	cwt.	13,815	11,362	17,793	13,837	14,007
	£	51,831	45,079	62,984	51,723	48,430
Total	cwt.(b)	306,133	312,342	349,522	300,951	340,560
	£	1,481,518	1,547,662	1,810,341	1,575,691	1,695,694

(a) Not available. (b) Exclusive of potted fish.

Tinned fish constitutes by far the largest proportion of the imports, most of it consisting of salmon from Canada, the United States of America, Norway, and the United Kingdom. The potted fish comes chiefly from the United Kingdom, which also supplied the largest proportion of the fresh fish in 1928-29, the bulk of the remainder coming from New Zealand and the Union of South Africa. The small import of oysters is supplied by New Zealand.

2. Exports of Fish.—The exports of local fish produce for the five years 1924-25 to 1928-29 are given hereunder :—

FISH (AUSTRALIAN PRODUCE).—EXPORTS, 1924-25 TO 1928-29.

Classification.		1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Fish, fresh, smoked, {	cwt.	3,449	1,498	435	496	496
or preserved by {	£	23,710	7,606	4,072	4,857	3,674
cold process						
Preserved, in tins, {	cwt.	386	261	184	283	27
dried, salted, etc. {	£	1,401	491	371	548	40
Total .. {	cwt.	3,835	1,759	619	779	523
	£	25,111	8,097	4,443	5,405	3,714

The quantity of fresh fish exported from Australia during 1928-29 was small, amounting in value to only £1,456. The balance, consisting of smoked and dried fishery products, was exported chiefly to Hong Kong and Egypt.

3. Exports of Pearl and Other Shell.—The exports of pearl, tortoise, and trochus-shell, of Australian origin, are given hereunder for the five years 1924–25 to 1928–29 :—

PEARL, TORTOISE, AND TROCHUS-SHELL.—EXPORTS, AUSTRALIA,
1924–25 TO 1928–29.

Article.			1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
Pearl-shell	..	cwt.	44,112	48,631	45,451	44,119	45,058
		£	413,095	391,695	352,626	337,469	339,016
Tortoise-shell	..	lb.	2,432	4,993	3,662	4,506	4,311
		£	2,025	4,730	3,364	2,894	3,113
Trochus-shell	..	cwt.	16,552	19,787	22,851	21,968	18,814
		£	47,892	76,280	72,812	76,116	71,714

The bulk of the pearl-shell exported during 1928–29 was consigned to the United States of America and the United Kingdom, the respective values of the shipments amounting to £280,653 and £52,658, while trochus-shell to the value of £71,336 was dispatched chiefly to Japan.

§ 4. The Commonwealth Department of Fisheries.

In 1907 the Commonwealth Government decided to demonstrate what might be attained commercially by the application of modern methods in fishery. A Federal Investigation Ship, the *Endeavour*, was constructed specially for the work, and a Director of Fisheries was appointed. Experimental cruises were undertaken, which showed that Australia possesses an asset of considerable value in her sea fisheries. The *Endeavour* was unfortunately lost at sea with all on board at the end of 1914. A description of the trawling grounds discovered, data regarding oceanography to the east of Australia, and a list of the publications of the Department are given in pp. 333 to 335 of Year Book No. 14.

In accordance with the recommendations of the Australian Fisheries Conference of 1927–29 the Commonwealth Government decided to construct a vessel to continue investigations, but the project has been temporarily postponed.

§ 5. Trawling in Australian Waters.

The State Trawling Industry was established in New South Wales in 1915, and fishing operations were conducted with seven steel steam trawlers. The catches were landed at Sydney and Newcastle, and the fish distributed through retail shops, of which there were fourteen in the metropolitan area, one in Newcastle, and five in country towns. Early in the year 1923 the Government discontinued trawling operations, as the venture was not a commercial success, and the assets have since been disposed of. The operations of the Government trawlers, however, revealed some of the richest trawling areas in the world, and these grounds are being successfully exploited by private enterprise.

CHAPTER XXI. MINERAL INDUSTRY.

§ 1. The Mineral Wealth of Australia.

1. **Place of Mining in Australian Development.**—The value of production from the mineral industry is now considerably less than that returned by the agricultural or the pastoral industry, nevertheless it was the discovery of gold in payable quantities that first attracted population to Australia, and thus laid the foundation of its nationhood.

2. **Extent of Mineral Wealth.**—The extent of the total mineral wealth of Australia cannot yet be regarded as completely ascertained, as large areas of country still await systematic prospecting. More detailed allusion to this matter will be found in preceding Official Year Books.

3. **Quantity and Value of Production during 1928.**—The quantities (where available) and the values of the principal minerals produced in each State, and in Australia as a whole during the year 1928, are given in the tables immediately following. It must be clearly understood that the figures quoted in these tables refer to the quantities and values of the various minerals in the form in which they were reported to the States Mines Departments, and represent amounts which the Mines Departments consider may fairly be taken as accruing to the mineral industry as such. They are not to be regarded as representative of Australia's potentiality as a producer of *metals*, this matter being dealt with separately in § 18 hereinafter. It may be explained, therefore, that the item pig-iron in New South Wales refers only to metal produced from locally-raised ore and so reported to the Mines Department. New South Wales is, of course, in normal times, a large producer of iron and steel from ironstone mined in South Australia. As the table shows, the latter State receives credit for this ironstone in its mineral returns, but the iron and steel produced therefrom cannot be assigned to the mineral industry of New South Wales. Similarly lead, silver-lead, and zinc are credited in the form reported to the State of origin—chiefly New South Wales—although the actual metal extraction is carried out to a large extent elsewhere.

MINERAL PRODUCTION.—QUANTITIES, 1928.

Minerals.	Unit.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T. (d)	Australia.
Antimony ..	ton	47	2	..	..	..	..	..	49
Arsenic ..	..	93	..	..	..	(c)	..	..	93
Asbestos ..	..	..	..	..	..	12	..	..	12
Barytes ..	..	20	..	..	2,366	..	..	..	2,386
Bismuth ..	cwt.	135	..	17	..	..	..	..	152
Brown Coal ..	ton	..	1,591,858	..	..	..	..	..	1,591,858
Coal ..	..	9,448,197	658,323	1,076,340	..	528,420	128,500	..	11,839,780
Copper (ingot, matte, etc.) ..	..	55	..	2,787	192	..	6,421	..	9,455
Copper ore ..	..	..	..	..	..	100	..	..	100
Diatomaceous earth ..	..	1,359	..	..	..	..	..	..	1,359
Gold ..	fine oz.	12,831	33,917	13,277	532	393,408	3,603	101	457,669
Gypsum ..	ton	12,559	10,559	..	91,535	4,214	..	..	113,867
Iron (pig) (b) ..	..	56,776	..	..	..	1	..	..	56,777
Iron oxide ..	..	4,658	..	..	..	..	..	..	4,658
Ironstone ..	..	..	..	..	618,316	..	..	..	618,316
Kaolin ..	..	9,249	1,635	..	160	..	..	..	11,044
Lead ..	..	..	..	43	..	..	4,787	..	4,830
Lead and silver-lead ore, concentrates, etc. ..	..	247,847	5	..	..	248	..	2	248,102
Limestone flux ..	..	79,846	..	72,771	80,968	..	98,654	..	332,239
Magnesite ..	..	10,669	72	..	45	..	..	..	10,786
Manganese ore ..	..	167	..	..	..	..	..	..	167
Molybdenite ..	cwt.	40	..	..	..	..	..	..	40
Osmiridium ..	oz.	..	..	..	..	..	1,627	..	1,627
Phosphate ..	ton	136	..	..	..	..	..	..	136
Pigments ..	..	415	..	..	55	..	..	..	470
Platinum ..	oz.	354	..	..	..	..	..	..	354
Salt ..	..	..	(a)	..	71,428	..	..	..	71,428
Sapphires ..	..	1,707	..	..	..	..	..	..	1,707
Shale (oil) ..	ton	..	..	..	..	..	2,595	..	2,595
Silver ..	fine oz.	8,573	1,454	22,034	..	55,554	669,326	..	756,941
Tin and tin ore ..	ton	1,020	85	1,015	..	85	1,140	79	3,424
Wolfram ..	..	..	..	27	..	..	176	..	203
Zinc and concentrates ..	..	314,864	..	..	..	..	7,112	..	321,976

(a) Not available for publication.

(b) See letterpress preceding this table.

(c) Quantity not stated: Contained in gold ore.

(d) Year ended 30th June.

The values of the minerals raised in each State during 1928 are given in the following table:—

MINERAL PRODUCTION.—VALUE, 1928.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T. (d)	Australia.
	£	£	£	£	£	£	£	£
Antimony ..	3,697	20	..	..	..	..	..	3,717
Arsenic ..	1,380	..	..	..	401	..	..	1,781
Asbestos ..	..	..	..	..	782	..	..	782
Barytes ..	40	..	..	7,098	..	..	..	7,138
Bismuth ..	371	..	71	..	..	..	..	442
Brown Coal ..	..	202,393	..	..	..	..	..	202,393
Coal ..	8,263,729	731,015	971,690	..	420,145	106,558	..	10,493,137
Copper (ingot and matte) ..	3,497	..	177,043	13,321	..	444,802	..	638,663
Copper ore ..	..	..	..	..	765	..	..	765
Diamonds ..	60	..	..	..	..	..	..	60
Diatomaceous earth	3,399	..	..	..	..	..	..	3,399
Gold ..	54,503	144,068	56,395	2,258	1,671,093	15,306	431	1,944,054
Gypsum ..	7,012	5,245	..	80,093	5,425	..	..	97,775
Iron (pig) (b) ..	312,268	..	..	..	1	..	..	312,269
Iron Oxide ..	2,660	..	..	..	..	..	..	2,660
Ironstone ..	..	..	..	711,063	..	..	..	711,063
Kaolin ..	10,926	2,388	..	640	..	..	..	13,954
Lead ..	..	..	873	..	..	101,616	..	102,489
Lead and silver- lead ore, con- centrates, etc. ..	2,491,153	100	..	..	4,198	..	22	2,495,473
Limestone flux ..	29,942	..	30,900	30,363	..	79,050	..	170,255
Magnetite ..	14,041	237	..	90	..	..	..	14,368
Manganese ore ..	568	..	..	..	..	..	..	568
Molybdenite ..	390	..	..	..	..	..	..	390
Opal ..	11,000	..	600	11,540	..	..	..	23,140
Osmiridium ..	..	..	..	..	..	42,458	..	42,458
Phosphate ..	259	..	..	..	..	..	..	259
Pigments ..	772	..	..	705	..	..	..	1,477
Platinum ..	4,544	..	..	..	..	..	..	4,544
Salt ..	..	(a)	..	160,713	..	..	..	160,713
Sapphires ..	2,859	..	4,130	..	..	..	..	6,989
Shale (oil) ..	..	..	..	..	1,297	..	..	1,297
Silver ..	936	175	2,514	..	6,638	78,901	..	89,184
Tin and tin ore ..	231,843	12,954	134,727	..	15,002	258,676	10,828	664,030
Wolfram ..	..	..	949	..	..	12,094	..	13,043
Zinc & concentrates	1,118,541	..	..	..	..	188,691	..	1,307,232
Unenumerated ..	(c) 30,273	96	6,124	(e) 15,068	3,659	(f) 6,122	3,346	64,693
Total ..	12,600,668	1,098,691	1,386,016	1,032,952	2,128,109	1,835,571	14,627	19,596,634

(a) Not available for publication. (b) See letterpress above table. (c) Includes dolomite £9,151, silica £8,881, and fireclay £10,390. (d) Year ended 30th June. (e) Includes fireclay £13,236. (f) Includes cadmium £4,329, and nickel £1,697.

It may be pointed out in connexion with the figures given in the above table that the totals are exclusive of returns relating to certain commodities, such as stone for building and industrial uses, sand, gravel, brick and pottery clays, lime, cement, and slates, which might rightly be included under the generic term "mineral." Valuations of the production of some of these may be obtained from the reports of the various Mines Departments, but in regard to others it is impossible to obtain adequate information. In certain instances, moreover, the published information is of little value. By restricting the comparison to items in connexion with which properly comparable information can be obtained for each State, it is believed that a satisfactory estimate of the progress of the mineral industry can be more readily obtained. The items excluded from the total for New South Wales in 1928 consist of—lime, £122,936; building stone, £284,858; Portland cement, £1,718,527; coke, £852,739; road materials, £991,310; shell grit, £1,624; mineral water, £140; sulphur and sulphuric acid, £61,840; and brick and pottery clays, £423,129. From the Queensland returns, marble, £900, has been deducted, while carbide, £68,877, and cement, £189,380, have been excluded from the Tasmanian figures.

4. Value of Production, 1924 to 1928.—The value of the mineral production in each State during the five years 1924 to 1928 is given in the table hereunder :—

MINERAL PRODUCTION.—VALUE, 1924 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Australia.
	£	£	£	£	£	£	£	£
1924 ..	16,299,835	964,917	2,305,669	953,592	2,776,796	1,325,967	19,138	24,645,914
1925 ..	16,657,585	1,000,763	2,012,456	1,028,396	2,393,890	1,477,944	21,715	24,592,749
1926 ..	16,319,265	1,082,006	1,608,661	1,032,353	2,371,864	1,573,997	19,085	24,007,231
1927 ..	15,449,702	1,176,378	1,645,111	1,188,522	2,202,437	1,301,312	19,609	22,983,071
1928 ..	12,600,668	1,098,691	1,386,016	1,032,952	2,128,109	1,335,571	14,627	19,596,634

For New South Wales the value of production in 1928 was over £4,000,000 lower than that for 1925, which was the highest ever recorded. The falling-off in 1928 was largely due to the decreased returns from silver-lead and zinc ores and concentrates, and from copper, tin, gold, iron, and coal.

The decrease in the Victorian returns for 1928 was chiefly due to a falling-off in the returns from gold, coal, and gypsum.

In Queensland the falling-off in production in 1928 was due to the heavy decline in the yields from the principal metals. Copper showed a fall of £42,000, tin of £59,000, lead dropped from £22,000 to under £1,000, while gold dwindled from £161,000 to £56,000. In the case of coal the value of the output was nearly £24,000 below that for 1927. The returns for South Australia in 1928 showed a fall of nearly £166,000 as compared with the figures for 1927, the most noteworthy decreases being nearly £120,000 in the case of iron ore, while the value for salt declined by £18,000, and for limestone by £15,000. In Western Australia the returns for 1928 show a decrease of over £74,000 on the total for 1927, the fall being due chiefly to the decline in the returns from gold and silver lead, although the figures for coal showed a good increase. Tasmania was the only State to show increased production in 1928 as compared with 1927, the total increase in value amounting to over £34,000. While there were decreases in the returns for some items, these were more than counterbalanced by large increases in the case of others. Thus, copper showed a rise of £82,000, osmiridium of £35,000, limestone flux of £20,000, and small increases were recorded in respect of zinc and coal. It is stated that the decline in the Northern Territory returns for recent years is due in some measure to the fact that some of those engaged in mining forsook it to take up more profitable work in other pursuits. The number of Chinese miners in the Territory has steadily decreased and those remaining are all old men.

5. Total Production to end of 1928.—In the next table will be found the estimated value of the total mineral production in each State up to the end of 1928. The figures given in the table are also exclusive of the same items referred to in connexion with the preceding table. Thus the total for New South Wales falls short by over £32,000,000 of that published by the State Department of Mines, the principal items excluded being coke, £12,999,000; cement, £15,567,000; lime, £1,483,000; and considerable values for marble, slate, granite, chert, gravels, etc., which the Department now includes in the returns for quarries.

MINERAL PRODUCTION.—VALUE TO END OF 1928.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter. (a)	Australia.
	£	£	£	£	£	£	£	Million. £
Gold ..	63,835,908	303,384,652	85,848,860	1,632,261	161,923,078	8,944,672	2,283,162	628
Silver and lead ..	114,882,437	264,905	4,165,085	381,394	2,256,942	8,664,054	63,980	131
Copper ..	15,556,451	216,656	26,163,000	33,117,654	1,805,946	19,032,157	232,852	96
Iron ..	7,714,126	15,641	472,785	6,946,699	86,722	52,110	..	10
Tin ..	14,197,520	973,117	10,955,250	..	1,576,234	17,039,682	614,222	45
Wolfram ..	272,187	11,885	1,062,749	301	1,441	224,155	216,859	2
Zinc ..	22,090,159	..	13,460	15,993	5,437	790,791	..	23
Coal ..	178,436,159	11,196,600	17,300,269	..	5,780,848	1,641,272	..	214
Other ..	7,837,522	856,158	2,924,998	4,187,170	187,888	1,594,199	43,980	18
Total ..	424,822,469	316,919,614	148,906,456	46,281,472	173,574,538	57,983,092	3,455,055	1,172

(a) To 30th June, 1928.

The "other" minerals in New South Wales include alunite, £209,000; antimony, £355,000; bismuth, £234,000; chrome, £121,000; diamonds, £145,000; molybdenite, £212,000; opal, £1,586,000; scheelite, £192,000; and oil shale £2,691,000. In the Victorian returns antimony ore was responsible for £612,000. The value for coal in this State includes £1,075,000 for brown coal. Included in "other" in the Queensland production were opal, £184,000; gems, £617,000; bismuth, £118,000; cobalt, £150,000; molybdenite, £599,000; and limestone flux, £888,800. The chief items in South Australian "other" minerals were salt, £2,470,000; limestone flux, £494,000; gypsum, £624,000; phosphate, £131,000; and opal, £112,000. In the Tasmanian returns limestone flux was responsible for £793,000, osmiridium for £524,000, scheelite for £112,000, and iron pyrites for £94,000.

6. Decline in the Metalliferous Industry.—On the 1st December, 1921, a Select Committee was appointed by the Legislative Assembly of New South Wales to inquire into and report upon the serious decline in the metalliferous industry. The result of the Committee's investigations was published in a Report issued in 1922, wherein the chief contributing causes of the decline in New South Wales and in Australia generally were summarized as follows:—(1) High cost of production: (2) Deterioration in ore values in existing mines: (3) Inadequate machinery: (4) High freights: (5) High treatment charges: (6) Imperfect labour conditions in mines: (7) Lack of new payable discoveries: (8) Lack of efficiently-supported prospecting.

7. Geophysical Methods for Detection of Ore Deposits.—Recently considerable attention has been devoted to gravimetric, surface potential, inductive, or magnetic methods of locating ore bodies, and the Empire Marketing Board has provided a sum of £16,000 spread over two years, conditionally on the Commonwealth Government making available an equal amount for the purpose of undertaking test surveys. The Government Geologist of New South Wales, after a close study of the methods in use in other countries, whilst deprecating undue optimism, suggested the Hunter River Basin, the Broken Hill District, and the Greater Cobar District as suitable fields for the application of geophysical methods.

8. Precious Metals Prospecting Act of 1926.—Under the provisions of this Act a sum of £40,000 was allocated by the Commonwealth Government to assist persons or companies engaged in prospecting for precious metals. Of the total sum an amount of £15,000 was set aside for the Northern Territory, and the balance to the States in proportions to be determined by the Minister.

§ 2. Gold.

1. Discovery in Various States.—The discovery of gold in payable quantities was an epoch-making event in Australian history, for, as one writer aptly phrases it, this event "precipitated Australia into nationhood." A more or less detailed account of the finding of gold in the various States appears under this section in Official Year Books Nos. 1 to 4, but considerations of space preclude its repetition in the present issue.

2. Production at Various Periods.—In the following table will be found the value of the gold raised in the several States and in Australia as a whole during each of the six decennial periods from 1851 to 1920, and in single years from 1921 to 1928, from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development, large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret.

GOLD.—VALUE OF PRODUCTION, 1851 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Australia.
	£	£	£	£	£	£	£	£
1851-60..	11,530,583	93,337,052	14,565	..	..	788,564	..	105,670,764
1861-70..	13,676,103	65,106,264	2,076,494	..	..	12,174	..	80,871,035
1871-80..	8,576,654	40,625,188	10,733,048	579,068	..	700,048	79,022	61,293,028
1881-90..	4,306,541	28,418,792	13,843,081	246,668	178,473	1,514,921	713,345	49,216,821
1891-1900	10,332,120	29,904,152	23,989,359	219,931	22,308,524	2,338,336	906,988	89,999,410
1901-10..	9,569,492	30,136,686	23,412,395	310,080	75,540,415	2,566,170	473,871	142,009,109
1911-20..	4,988,377	13,354,217	9,876,677	238,808	46,808,351	873,302	100,652	76,240,384
1921 ..	271,302	554,087	214,060	13,933	2,935,693	23,311	1,299	4,018,685
1922 ..	118,359	501,515	378,154	4,693	2,525,811	16,101	540	3,545,173
1923 ..	83,325	422,105	392,563	4,199	2,232,179	16,300	743	3,151,414
1924 ..	86,905	312,398	459,716	4,093	2,255,932	21,516	3,270	3,143,830
1925 ..	82,498	200,995	197,118	3,535	1,874,320	15,041	1,939	2,375,409
1926 ..	82,551	208,471	43,914	3,219	1,857,716	17,936	594	2,214,401
1927 ..	76,595	163,699	161,321	1,776	1,734,571	20,646	468	2,169,076
1928 ..	54,503	144,068	56,395	2,258	1,671,093	15,306	431	1,944,054
Total ..	63,835,908	303,384,652	85,848,860	1,632,261	161,923,078	8,944,672	2,283,162	627,852,593

The value of the gold yield in 1928 was the lowest recorded since the discovery of the precious metal in 1851.

The amount of gold raised in Australia in any one year attained its maximum in 1903, in which year Western Australia also reached its highest point. For the other States the years in which the greatest yields were obtained were as follows:—New South Wales, 1852; Victoria, 1856; Queensland, 1900; South Australia, 1904; and Tasmania, 1899.

The following table shows the quantity in fine ounces of gold raised in each State and in Australia during each of the last five years, the value of one ounce fine being taken at £4 13s. 0½d. in 1924, and at £4 4s. 11 ⁵/₁₁d. for each of the last four years:—

GOLD.—QUANTITY PRODUCED, 1924 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Australia.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
1924 ..	18,685	67,167	98,841	880	485,035	4,626	(a) 703	675,937
1925 ..	19,422	47,296	46,406	832	441,252	3,524	(a) 456	559,188
1926 ..	19,435	49,078	10,339	758	437,343	4,222	(a) 140	521,315
1927 ..	18,032	38,538	37,979	418	408,353	4,861	(a) 110	508,291
1928 ..	12,831	33,917	13,277	532	393,408	3,603	(a) 101	457,669

(a) Year ended 30th June.

Unfortunately, the general decline which has characterized Australia's gold output for a number of years has not been checked by new finds of importance, and unless more economic methods of exploiting existing low-grade deposits can be evolved the depression is likely to continue.

3. Changes in Relative Positions of States as Gold Producers.—A glance at the figures in the table showing the value of gold raised will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached the State each year. With the exception of the year 1889, when its output was surpassed by that of Queensland, Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was outstripped by that of Western Australia, the latter State from this year onward contributing practically half, and so far as recent years are concerned more than half the entire yield of Australia. New South Wales occupied the second place on the list until 1874, when Queensland returns exceeded those of the parent State, and, with the exception of the years 1921 and 1926, maintained this pre-eminence to the end of 1923. South Australia has occupied the position of lowest contributor to the total gold yield since the year 1871. Taking the average of the last ten years, the relative position of each State in regard to the gold production of Australia was as follows:—

GOLD.—RELATIVE POSITION OF STATES AS PRODUCERS, 1919 TO 1928.

State.	Annual Average of Gold Production, 1919 to 1928.	Percentage on Total.	State.	Annual Average of Gold Production, 1919 to 1928.	Percentage on Total.
	ozs.			ozs.	
Total ..	695,955	100.0	New South Wales	29,838	4.3
Western Australia..	511,379	73.5	Tasmania ..	4,722	0.7
Victoria ..	83,100	11.9	South Australia ..	1,292	0.2
Queensland ..	65,279	9.4	Northern Territory	345	..

4. **Methods of Gold Mining adopted in Each State.**—Allusion to the methods of gold mining adopted in each State, and the production from the chief centres therein will be found in preceding issues of the Official Year Book, but considerations of space preclude reference to these matters in the present issue.

5. **Remarkable Masses of Gold.**—Allusion has already been made in preceding Year Books to the discovery of “nuggets” and other remarkable masses of gold, but it is not proposed to repeat this information in the present issue. (See Year Book No. 4, page 500.)

6. **Modes of Occurrence of Gold in Australia.**—This subject has been alluded to at some length in earlier issues of the Year Book, but considerations of space will not permit of repetition in the present issue.

7. **Place of Australia in the World's Gold Production.**—In the table given below will be found the estimated value of the world's gold production, and the share of Australia therein during the five years 1924 to 1928. The figures given in the table have been compiled chiefly from returns obtained directly by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

GOLD.—WORLD'S PRODUCTION, 1924 TO 1928.

Year.	World's Production of Gold.	Gold Produced in Australia.	Percentage of Australia on Total.
	£	£	%
1924	89,271,000	3,142,000	3.5
1925	81,605,000	2,375,000	2.9
1926	82,684,000	2,214,000	2.7
1927	82,598,000	2,159,000	2.6
1928	83,907,000	1,944,000	2.3

The value of the gold yield in the ten chief producing countries during each of the five years 1924 to 1928 is given in the table hereunder. Particulars of the quantity and value of the gold production for all countries for the ten years 1919–28 will be found in the Bulletin of Australian Production issued by this Bureau.

GOLD.—PRODUCTION, CHIEF COUNTRIES, 1924 TO 1928.

Country.	1924.	1925.	1926.	1927.	1928.
	£	£	£	£	£
Union of South Africa	44,534,000	40,768,000	42,285,000	42,998,000	43,982,000
United States ..	11,378,000	9,854,000	9,509,000	8,993,000	9,110,000
Canada	7,095,000	7,373,000	7,451,000	7,870,000	8,031,000
Russia	4,456,000	4,507,000	4,214,000	4,507,000	5,097,000
Mexico	3,686,000	3,351,000	3,282,000	3,081,000	2,970,000
Rhodesia	2,920,000	2,470,000	2,521,000	2,470,000	2,447,000
Australia	3,142,000	2,375,000	2,214,000	2,159,000	1,944,000
India	1,843,000	1,673,000	1,631,000	1,632,000	1,597,000
Japan	1,177,000	1,189,000	1,285,000	1,374,000	1,312,000
Gold Coast ..	957,700	844,000	847,600	728,800	670,400
Colombia	1,391,000	1,070,000	757,000	681,000	608,000

It has been deemed advisable to apportion values in accordance with Australian currency, i.e., at £4 13s. 0½d. for 1924, and £4 4s. 11½d. for each of the last four years.

The next table shows the average yearly value in order of importance of the yield in the chief gold-producing countries for the decennium 1919–1928.

GOLD.—AVERAGE ANNUAL PRODUCTION, CHIEF COUNTRIES, 1919 TO 1928.

Country.	Value.	Country.	Value.
	£		£
Union of South Africa ..	41,948,000	Rhodesia	2,800,000
United States ..	11,112,000	Russia	2,698,000
Canada ..	6,233,000	India	1,889,000
Mexico ..	3,497,000	Japan	1,294,000
Australia	3,331,000	Colombia	1,153,000

The comparison has been restricted to countries where the average for the period is in excess of a million sterling.

8. **Employment in Gold Mining.**—The number of persons engaged in gold mining in each State in 1901 and during each of the last five years is shown in the following table:—

GOLD MINING.—PERSONS EMPLOYED, 1901, AND 1924 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Total.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ..	12,064	27,387	9,438	1,000	19,771	1,112	200	70,972
1924 ..	1,014	2,651	452	30	5,296	128	18	9,589
1925 ..	831	2,353	347	34	5,009	103	32	8,709
1926 ..	808	1,967	321	26	4,488	107	26	7,743
1927 ..	670	1,126	304	17	4,056	65	12	6,250
1928 ..	736	655	343	30	3,863	47	12	5,686

The heavy decline noticeable since 1901 is of course due to the exhaustion of accessible payable deposits and the failure to locate any considerable fresh sources of supply.

§ 3. Platinum and Platinoid Metals.

1. **Platinum.**—(i) *New South Wales.* The deposits at present worked in the State are situated at Platina in the Fifield division, near Parkes, and the production in 1928 amounted to 354 ozs., valued at £4,544 as compared with 226 ozs., valued at £3,200 in the preceding year, while the total production recorded to the end of 1928 amounted to 18,800 ozs., valued at £117,370. Experiments were in progress during 1928 to find a method of treating commercially the complex platinoid ores found near Broken Hill.

(ii) *Victoria.* In Gippsland the metal has been found in association with copper, and 127 ozs. were produced in 1913, but there was no production in recent years.

(iii) *Queensland.* Platinum, associated with osmiridium, has been found in the beach sands between Southport and Currumbin, in creeks on the Russell goldfield near Innisfail, and in alluvial deposits on the Gympie gold-field, but no production has been recorded.

2. **Osmium, Iridium, etc.**—(i) *New South Wales.* Small quantities of osmium, iridium, and rhodium are found in various localities. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban; on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

(ii) *Victoria.* In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

(iii) *Tasmania.* For 1928 the yield of osmiridium was returned as 1,627 ozs., valued at £42,458, the quantity raised being about 1,000 ozs. higher than in 1927, the increase being due to enhanced price and a steady market. Prices fluctuated between £26 and £29 per oz.

§ 4. Silver and Lead.

1. **Occurrence in Each State.**—Particulars regarding the occurrence of silver in each State will be found in preceding Year Books, Nos. 1 to 5, but considerations of space preclude the repetition of this matter in the present volume.

2. **Development of Silver Mining.**—The value of the production of silver, silver-lead and ore, and lead from each State during the five years ending 1928 is given hereunder :—

SILVER AND LEAD.—PRODUCTION, 1924 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Australia.
	£	£	£	£	£	£	£	£
1924 ..	4,310,360	645	167,469	373	96,504	252,718	..	4,828,069
1925 ..	5,320,976	291	240,684	1,655	114,961	302,961	(a) 617	5,982,145
1926 ..	4,399,953	307	147,724	865	85,604	281,155	(a) 447	4,916,055
1927 ..	3,487,980	304	32,102	143	30,421	222,427	(a) 379	3,773,756
1928 ..	2,492,089	275	3,387	..	10,836	180,517	(a) 22	2,687,126

(a) Year ended 30th June.

Production in New South Wales during 1924 was greatly stimulated by the favourable price of the metals, and with the exception of the Central mine, where work was restricted to fire-fighting, the chief mines on the Broken Hill lode were in full operation. Renewed activity resulted from the high prices of lead and zinc in 1925, when the Central mine rejoined the list of producers, the fire areas having been isolated by water curtains on the various levels as required. The decline in values recorded in the last three years was due to falling prices. Owing to the low price of lead in 1928 several of the Broken Hill mines ceased production.

It must be understood that the totals for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State. In explanation of the values thus given, it may be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State are extracted outside New South Wales, and the Mines Department considers, therefore, that the State should not take full credit for the finished product. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the quantity of these metals locally produced, and the average contents by assay of concentrates exported during the last five years, will show, as regards New South Wales, the estimated total production and the value accruing to Australia from the three metals :—

SILVER-LEAD MINES.—NEW SOUTH WALES, TOTAL PRODUCTION, 1924 TO 1928.

Year.	Metal Produced within Australia.				Contents of Concentrates Exported.			
	Silver.	Lead.	Zinc.	Value.	Silver.	Lead.	Zinc.	Value.
	ozs. fine.	tons.	tons.	£	ozs. fine.	tons.	tons.	£
1924 ..	6,292,978	120,380	43,579	6,472,812	2,963,693	21,513	114,374	1,292,220
1925 ..	7,437,967	139,839	39,991	7,539,130	1,782,193	30,752	75,485	1,371,183
1926 ..	7,338,477	142,654	39,277	6,730,689	2,371,264	23,242	96,167	1,591,673
1927 ..	7,901,861	156,306	42,757	5,955,009	2,339,382	26,709	115,123	1,467,235
1928 ..	7,068,964	151,475	44,004	5,256,649	1,259,931	11,372	94,987	886,620

The figures given above are quoted on the authority of the Mines Department of New South Wales. Accurate details in regard to gold, copper, and antimony contained in the silver-lead ores are not available. Cadmium was first extracted in 1922 at Risdon, in Tasmania, and in 1928 the amount won was given as 20 tons, valued at £4,329. As pointed out previously, credit for this value is not taken in the New South Wales returns.

3. Sources of Production.—Broken Hill, in New South Wales, is the chief centre of silver production in Australia.

(i) *New South Wales.* (a) *Broken Hill.* A description of the silver-bearing area in this district is given in earlier issues of the Year Book.

As pointed out previously, production in 1928 was adversely affected by the prices ruling during the year, especially in regard to lead, and the tonnage of ore raised fell to 1,158,461, almost the entire quantity being sulphide.

Although the returns are not complete in all cases, the following table relating to the companies controlling the principal mines at Broken Hill will give some idea of the richness of the field :—

SILVER.—BROKEN HILL RETURNS TO END OF 1928.

Mine.	Value of Output to end of 1928.	Dividends and Bonuses Paid to end of 1928.
	£	£
Broken Hill Proprietary Co. Ltd.	52,731,564	13,520,862
Broken Hill Proprietary Block 14 Co. Ltd.	4,661,223	670,160
British-Australian Broken Hill Co. Ltd.	5,858,998	821,280
Broken Hill Proprietary Block 10 Co. Ltd.	4,946,989	1,432,500
Sulphide Corporation Ltd. (Central and Junction Mines)	25,703,860	3,174,375
Broken Hill South Ltd.	20,244,384	4,635,000
North Broken Hill Ltd.	15,286,085	4,633,940
Broken Hill Junction Lead Mining Co.	1,185,058	87,500
Junction North Broken Hill Mine	3,505,506	171,431
The Zinc Corporation Ltd.	7,841,107	2,957,606
Barrier South Ltd.	151,517	50,000
Totals	142,116,291	32,154,654

The returns relating to dividends and bonuses paid are exclusive of £1,744,000 representing the nominal value of shares in Block 14, British, and Block 10 companies, allotted to shareholders of Broken Hill Proprietary Company. If the output of the companies engaged in treating the tailings, etc., be taken into consideration, the totals for output and dividends shown in the table would be increased to about 149 millions and 35 millions respectively. The authorized capital of the various companies amounted to £6,823,000.

(b) *Other Areas.* Silver is found in various other localities in New South Wales, but the production therefrom in 1928 was unimportant, with the exception of the Yerranderie area from which a production of 206,000 ozs. was reported.

(ii) *Victoria.* The silver produced in 1928 amounted to 1,454 ozs., valued at £175, and was obtained in the refining of gold at the Melbourne Mint. In addition, 5 tons of silver lead ore, valued at £100, were obtained from a lease at Buchan.

(iii) *Queensland.* Owing to low prices, the yields from the chief silver and lead producing centres in 1928 showed a considerable decline, the total value of the production of both metals being only £3,400, as compared with £148,000 in 1926, and £241,000 in 1925.

(iv) *South Australia.* Silver ore has been discovered at Miltalie and Poonana, in the Franklin Harbour district, also at Mount Malvern and Olivaster, near Rapid Bay, and in the vicinity of Blinman and Farina, at Baratta, and elsewhere. The production of silver in 1927 was valued at £20, and of silver-lead ore at £123. There was no record of production in 1928.

(v) *Western Australia.* The quantity of silver obtained as a by-product and exported in 1928 was 55,554 ozs., valued at £6,638. In addition, 248 tons of lead and silver-lead ore and concentrates valued at £4,198 were exported. The production of lead ore from the Northampton mineral field amounted in 1928 to 112 tons.

(vi) *Tasmania*. The silver produced in 1928 amounted to 669,326 ozs., valued at £78,901, and the lead to 4,787 tons, valued at £101,616. About 564,000 ozs. of the total silver output were contained in silver lead, while 105,000 ozs. were contained in the blister copper produced by the Mount Lyell Co.

(vii) *Northern Territory*. Silver-lead ores are found near Pine Creek, and at Mount Shooobridge near Brock's Creek railway station. There are a number of fair-sized galena lodes in the Pine Creek and McArthur River districts, but, owing to costs of transport and realization little attention is devoted to them. The small production recorded in 1928 was obtained from deposits near Mount Shooobridge.

4. **World's Production.**—The world's production of silver during the last five years for which particulars are available is estimated to have been as follows :—

SILVER.—WORLD'S PRODUCTION, 1924 TO 1928.

Total.	1924.	1925.	1926.	1927.	1928.
World's production in 1,000 fine ozs.	239,107	245,186	253,186	251,232	252,187

The share of Australia in the world's silver production in 1919 was estimated at 7,800,000 ozs., or about $4\frac{1}{2}$ per cent. of the total production, but in 1921, owing to the cessation of operations at the Broken Hill field, the total local extraction fell to 4,573,000 ozs., and the estimated silver contents of the ores, bullion, and concentrates exported to 732,000 ozs., the total being a little over 3 per cent. of the world's production. For 1928 local extraction was set down as 8,053,000 ozs., and exports as 1,571,000 ozs., the total being equivalent to a little under 4 per cent. on production for the world. The figures for the world's production are given on the authority of *The Mineral Industry*.

Arranged in order of importance the estimated yields in 1928 from the chief silver producing countries were as follows :—

SILVER.—PRODUCTION, CHIEF COUNTRIES, 1928 (a).

Country.	Production.	Country.	Production.
	Fine ozs. (‘000 omitted.)		Fine ozs. (‘000 omitted.)
Mexico	108,537	Japan	5,000
United States	56,020	Central America	3,000
South America	26,750	Dutch East Indies	2,200
Canada	21,923	Transvaal	1,031
Europe	(a) 11,750	China	150
Australia	9,624	Rhodesia	140
British India	7,404		

(a) Partly estimated.

5. **Prices.**—As the production of silver is dependent to a very large extent on the price realized, a statement of the average price per standard ounce in the London market during the last five years is given below :—

SILVER.—PRICES, 1924 TO 1928.

Price.	1924.	1925.	1926.	1927.	1928.
Pence per standard oz. ..	33.97	32.09	28.69	26.05	26.74

The average price in cents per fine ounce in New York fell from 66.78 in 1924 to 58.18 in 1928.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining during each of the last five years is given below :—

SILVER MINING.—PERSONS EMPLOYED, 1924 TO 1928.

Year.	N.S.W. (a)	Q'land.	W. Aust.	Tasmania. (a)	Nor. Ter.	Australia.
	No.	No.	No.	No.	No.	No.
1924	5,468	759	(b) 141	479	15	(c) 6,874
1925	5,770	590	(b) 204	579	4	(d) 7,166
1926	5,924	390	(b) 138	523	2	(e) 7,002
1927	5,833	277	(b) 51	718	..	(f) 6,882
1928	4,666	282	(b) 12	627	..	(g) 5,589

(a) Silver, lead, and zinc. (b) Principally lead and silver-lead ore. (c) Including 12 in South Australia. (d) Including 19 in South Australia. (e) Including 25 in South Australia. (f) Including 2 in Victoria and 1 in South Australia. (g) Including 2 in Victoria.

The bulk of the employment up to 1924, when Queensland assumed importance, was in New South Wales and Tasmania, the quantity of silver raised in the other States being unimportant.

§ 5. Copper.

1. **Production.**—The production of copper in the various States has been influenced considerably by the ruling prices, which have undergone extraordinary fluctuations. The value of the local production as reported and credited to the mineral industry for the years 1924 to 1928 is shown in the following table :—

COPPER.—PRODUCTION, 1924 TO 1928.

State.	1924.	1925.	1926.	1927.	1928.
	£	£	£	£	£
New South Wales	71,658	30,215	22,473	12,655	3,497
Queensland	380,025	254,074	73,591	218,842	177,043
South Australia	26,046	35,878	14,681	12,452	13,321
Western Australia	40,676	18,200	84	101	765
Tasmania	457,386	436,661	454,854	362,988	444,802
Northern Territory	(a) 239	(a) 15	(a) 60	..	..
Australia	976,030	775,043	565,743	607,038	639,428

(a) Year ended 30th June.

The total value of the production in 1920 was £2,658,000, and the heavy fall during recent years was due to the low price of the metal preventing the profitable working of many of the copper mines throughout Australia.

2. **Sources of Production.**—(i) *New South Wales.* The depression in this branch of the mining industry during the last few years is likely to continue, unless copper appreciates in value, and less costly methods of production are evolved. For the year 1917 the yield was valued at upwards of £814,000, in 1918 it was returned at £697,000, while in 1928 it had declined to under £4,000. About 1,200 tons of copper were obtained at the Port Pirie smelters in the refining of New South Wales silver-lead-zinc ores.

(ii) *Queensland.* The yield in this State amounted in 1928 to 2,787 tons valued at £177,043, and shows a serious decline as compared with 1920 when nearly 16,000 tons valued at £1,552,000 were raised. The falling-off in the yield in recent years was due partly to the low prices realized for copper and partly to old-fashioned plant and methods of treatment. Returns from the chief producing areas in 1928 were as follows :—Cloncurry, 2,339 tons, £148,526; and Mount Morgan, 430 tons, £27,336.

(iii) *South Australia.* Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State. In recent years, however, Queensland, Tasmania, and New South Wales have come to the front as copper producers, as the table on the preceding page shows. Deposits of copper ore are found over a large portion of South Australia. A short account of the discovery, etc., of some of the principal mining areas, such as Kapunda, Burra Burra, Wallaroo, and Moonta, was given in earlier issues of the Official Year Book. During the year 1928 increased attention was given to the possibility of making fresh discoveries in the Moonta and Wallaroo copper field. Opened in 1860, this field worked continuously until 1923, and produced copper to the value of £20,000,000. In 1928 the production amounted to 192 tons, valued at £13,321.

(iv) *Western Australia.* The value of the copper exported from this State in 1928 was only £765 as compared with £18,200 in 1925, the small production in 1928 being due to the low price ruling for the metal.

(v) *Tasmania.* The quantity of copper produced in Tasmania during 1928 was 6,421 tons, valued at £444,802, the whole of the production being due to the Mount Lyell Mining and Railway Co. Ltd. This Company treated 33,532 tons of ore and concentrates and produced 6,481 tons of blister copper, containing copper, 6,421 tons; silver, 105,270 ozs.; and gold, 2,025 ozs.; the whole being valued at £465,982.

(vi) *Northern Territory.* Copper has been found at various places, but lack of capital and difficulty of transport prevent the development of the deposits. In 1926, the production was returned at 7 tons of ore, valued at £60, obtained near Kilgour gorge in the Borroloola district, but none was recorded in 1927 and 1928.

3. Prices.—The great variation in price that the metal has undergone is shown in the following table, which gives the average price in London and New York during each of the last five years. The figures are given on the authority of the *The Mineral Industry*.

COPPER.—PRICES, 1924 TO 1928.

Year.				Average London Price per Ton Standard Copper.	Average New York Price in Cents per lb. Electrolytic Copper.
				£	Cents.
1924	..	..	..	63.15	13.02
1925	..	..	..	61.92	14.04
1926	..	..	..	57.97	13.80
1927	..	..	..	55.65	12.92
1928	..	..	..	63.70	14.57

As evidence of the tremendous variation in the price of copper it may be noted that in December, 1916, the average London price of standard copper was £145.32 per ton, while in June, 1927, it was quoted at £54.03. In 1928 the highest average was £69.34, recorded in December.

4. World's Production of Copper.—The world's production of copper during the five years 1924 to 1928 is estimated to have been as follows. The figures for foreign countries have been taken from the latest issue of *The Mineral Industry* :—

COPPER.—WORLD'S PRODUCTION, 1924 TO 1928.

Year	..	..	1924.	1925.	1926.	1927.	1928.
World's production—tons			1,359,300	1,417,000	1,456,000	1,495,400	1,681,300

The yields from the chief copper-producing countries in 1928 were as follows :—

COPPER.—PRODUCTION, CHIEF COUNTRIES, 1928.

Country.	Production.	Country.	Production.
	Tons.		Tons.
United States	834,800	Germany	23,600
Chile	285,300	Cuba	16,800
Africa	126,000	Jugo-Slavia	14,800
Canada	86,300	Australia	13,800
Japan	65,000	Norway	12,900
Mexico	64,800	Russia	12,800
Spain and Portugal ..	53,000	Bolivia	6,700
Peru	51,600	Austria	3,200

The Australian production in 1928 amounted to under 1 per cent. of the total.

During the years 1926 and 1927 more than half the world's copper output was produced by the United States. A cartel known as Copper Exporters Incorporated formed there in that year controls about 90 per cent. of the world's production of the metal, and as the figures above show, the share of the United States in the world's total was nearly 50 per cent. in 1928.

5. **Employment in Copper Mining.**—The number of persons employed in copper mining during each of the last five years was as follows :—

COPPER MINING.—PERSONS EMPLOYED, 1924 TO 1928.

Year.	N.S.W.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Australia.
	No.	No.	No.	No.	No.	No.	No.
1924	52	1,017	34	110	532	12	1,757
1925	47	878	55	34	743	6	1,763
1926	31	270	26	8	697	..	1,032
1927	29	271	20	9	760	..	1,089
1928	3	517	14	10	1,181	..	1,725

§ 6. Tin.

1. **Production.**—The development of tin mining is, of course, largely dependent on the price realized for the metal, and, as in the case of copper, the production has been subject to somewhat violent fluctuations. The table below shows the value of the production as reported to the Mines Departments in each of the States during the five years 1924 to 1928 :—

TIN.—PRODUCTION, 1924 TO 1928.

State.	1924.	1925.	1926.	1927.	1928.
	£	£	£	£	£
New South Wales	259,485	250,944	326,474	287,539	231,843
Victoria	6,056	11,592	5,075	11,454	12,954
Queensland	175,509	161,500	174,147	193,774	134,727
Western Australia	12,008	15,392	10,450	13,316	15,002
Tasmania	275,014	297,515	322,526	317,593	268,676
Northern Territory (a) ..	12,855	15,966	15,852	18,754	10,828
Total	740,927	752,909	854,524	842,430	664,030

(a) Year ending 30th June.

The rise in the price of tin during the first four years covered by the table is reflected in the increased value of production. In 1923, the average London price was £202 3s. per ton, while in 1926 it had advanced to £291 2s. per ton. There was a decline in the average for 1927 to £288 19s. per ton, although in March of that year the price was £313 6s. The sharp decline in values is reflected in the decreased production in 1928.

2. Sources of Production.—(i) *New South Wales*. Although the production for the year 1928 exceeded that for 1927 by 44 tons, nevertheless, as the preceding table shows, the fall in price was responsible for a decline in value of nearly £56,000. A large proportion of the output in New South Wales is obtained by dredging, in the New England district the quantity so won in 1928 being 635 tons, valued at £96,121.

(ii) *Victoria*. The production in 1928 was obtained by dredging, the Cock's Pioneer Gold and Tin Co. in the Beechworth district contributing 61 tons valued at £8,816, while 8 tons were raised from leases at Walwa, and 16 tons at Toora.

(iii) *Queensland*. The chief producing districts in Queensland during 1928 were Herberton, 604 tons, valued at £73,753; Kangaroo Hills, 107 tons, £18,753; Stanthorpe, 188 tons, £27,808; Cooktown, 48 tons, £6,292; and Chillagoe, 66 tons, £7,909. Despite the satisfactory prices realized in 1928, the total production valued at £135,000, was much below that of 1920, when the yield was valued at £252,000.

(iv) *Western Australia*. The export of tin from the State during 1928 amounted to 85 tons, valued at £15,002. The production from the Greenbushes field amounted to 55 tons of black tin, valued at £6,355, and from the Pilbara field 35 tons, valued at £5,171.

(v) *Tasmania*. During 1928 the output of tin amounted to 1,140 tons, valued at £258,676, the principal producers being the Bischoff (North Valley) at Waratah, £51,000; Briseis at Derby £49,000; Pioneer at Bradshaw's Creek £24,000; the Endurance at South Mt. Cameron £23,000; and Storey's Creek at Avoca £18,000.

(vi) *Northern Territory*. The yield of tin concentrates and ore in 1928 amounted to 79 tons, valued at £10,828, of which 49 tons were raised at Marranboy, 19 tons at Mt. Wells, and 3 tons at Hayes Creek, while small quantities were raised at Stray Creek, Collia, and elsewhere.

3. World's Production.—According to *The Mineral Industry* the world's production of tin during each of the last five years was as follows:—

TIN.—WORLD'S PRODUCTION, 1924 TO 1928.

1924.	1925.	1926.	1927.	1928.
Tons. 140,783	Tons. 145,804	Tons. 142,989	Tons. 157,000	Tons. 178,000

The yields from the chief producing countries in 1928 were as follows:—

TIN.—PRODUCTION, CHIEF COUNTRIES, 1928.

Country.	Production.	Country.	Production.
	Tons.		Tons.
Federated Malay States ..	61,900	Great Britain ..	2,800
Bolivia ..	41,400	Burma ..	2,600
Netherlands East Indies ..	34,900	Unfederated Malay States ..	2,500
Nigeria ..	9,000	Indo-China and Japan ..	1,500
Siam ..	7,600	Spain and Portugal ..	1,500
China ..	6,800	South Africa ..	1,200
Australia ..	3,100		

Based on the results for the last three years, Australia's share of the world's tin production would appear to be a little under 2 per cent.

4. Prices.—The average price of the metal in the London market for the years 1924 to 1928 was as follows, the figures being taken from *The Mineral Industry*.

TIN.—PRICES, 1924 TO 1928.

Year.	Average Price per Ton.	Year.	Average Price per Ton.
	£ s. d.		£ s. d.
1924.. .. .	248 17 4	1927	288 1 5
1925.. .. .	261 1 6	1928	227 4 8
1926.. .. .	291 2 0		

The increase in production for the last two years was accompanied by a fall in price, and this was accentuated in 1928 when the price dropped from an average of £253 6s. 5d. in January to £212 11s. in July. For the remainder of the year there was an upward tendency, but the price in December was only £227 13s. 11d., and the average for the year £227 4s. 8d. It is stated that production costs have fallen in the chief producing centres, and profitable working is, therefore, possible at a lower return.

5. Employment in Tin Mining.—The number of persons employed in tin mining during the last five years is shown below:—

TIN MINING.—PERSONS EMPLOYED, 1924 TO 1928.

Year.	N.S.W.	Victoria.	Q'land.	W. Aust.	Tas.	Nor. Ter.	Australia.
	No.	No.	No.	No.	No.	No.	No.
1924	1,004	2	698	40	781	115	2,640
1925	1,012	(a)	653	55	1,035	118	(b)2,875
1926	1,235	(a)	714	78	1,057	112	3,196
1927	1,430	42	906	106	1,230	95	3,809
1928	1,275	118	954	119	1,113	95	3,674

(a) The tin produced in Victoria was raised by a dredging company operating primarily for gold.

(b) Including 2 in South Australia.

§ 7. Zinc.

1. Production.—(i) *New South Wales.* (a) *Values Assigned.* The production of zinciferous concentrates is chiefly confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores. During the earlier years of mining activity on this field a considerable amount of zinc was left unrecovered in tailings, but from 1909 onwards improved methods of treatment resulted in the profitable extraction of the zinc contents of the accumulations at the various mines.

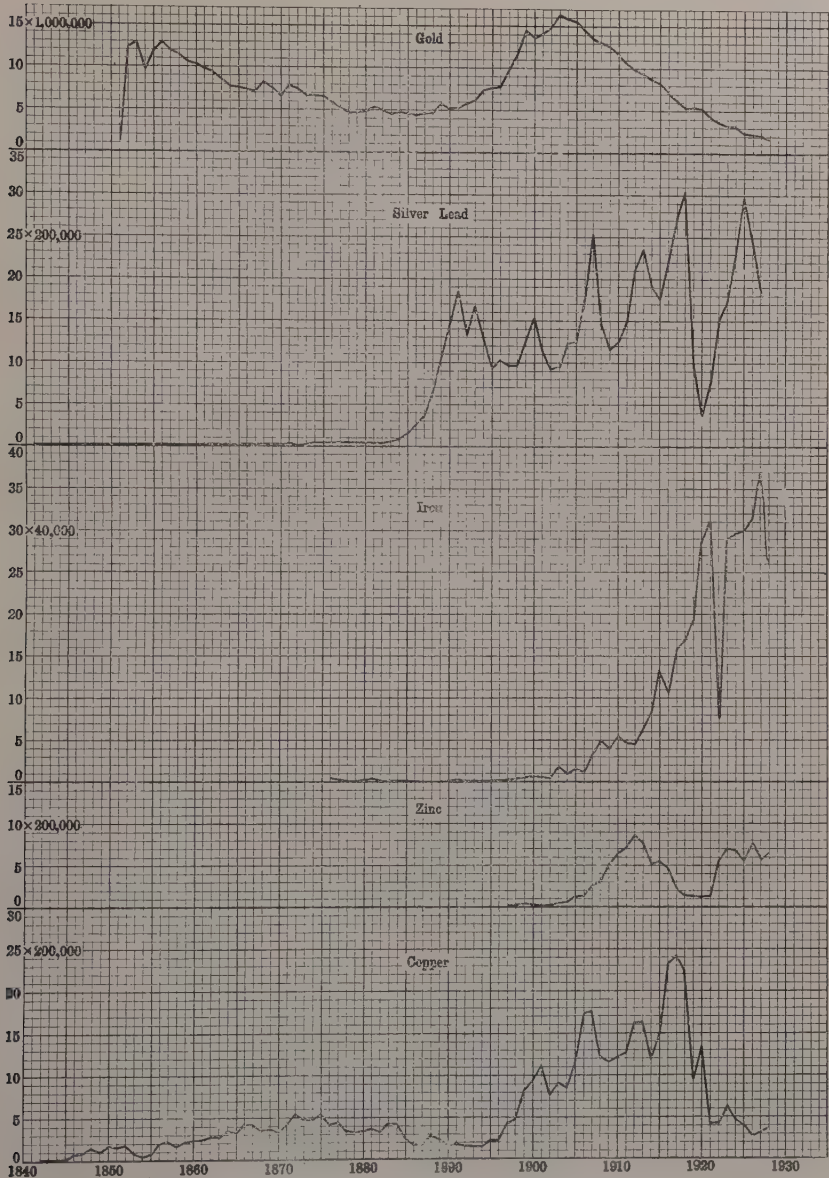
As the metallic contents of the bulk of the concentrates, etc., raised in the Broken Hill district are extracted outside New South Wales, the mineral industry of that State is not credited by the Mines Department with the value of the finished product. During 1928 the zinc concentrates actually exported amounted to 315,000 tons valued at £1,118,000.

(b) *Local and Foreign Extraction.* A statement of the quantity of zinc extracted in Australia and the estimated zinc contents of concentrates exported overseas during the five years 1924 to 1928 will be found in § 18 hereinafter.

(ii) *Queensland.* The total production of zinc in 1926 was returned at 200 tons, valued at £6,827, produced from ores raised in the Chillagoe area, but there was no record of production in 1927 or 1928.

(iii) *South Australia.* Zinc is known to exist in various localities in South Australia, but there has been no production during recent years.

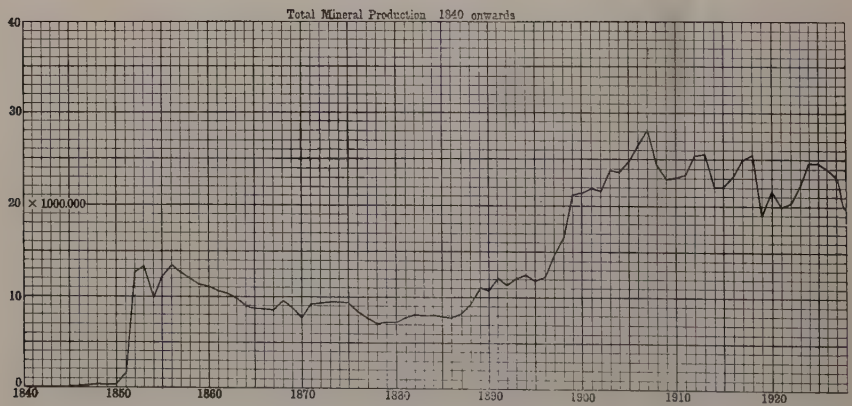
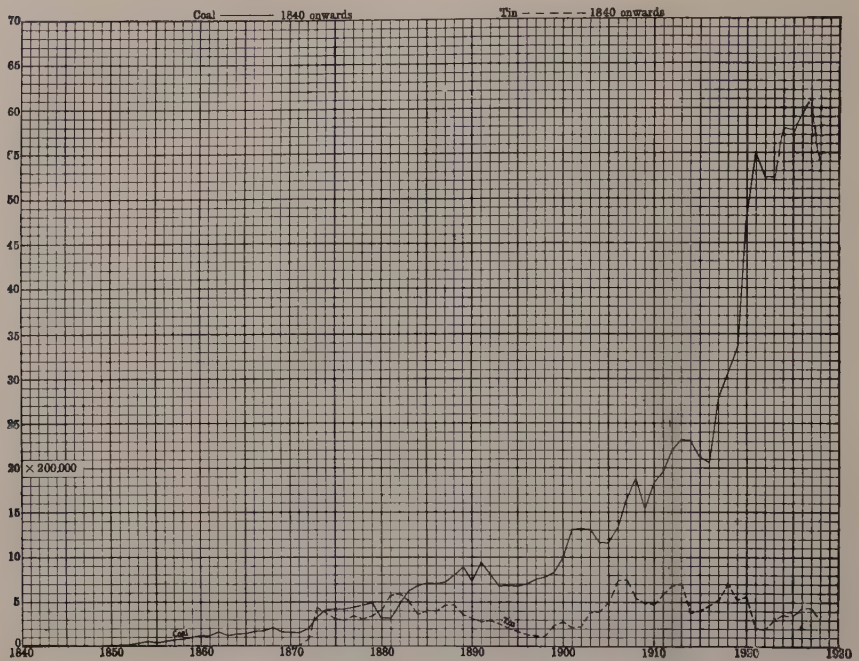
VALUES OF THE PRINCIPAL MINERALS PRODUCED—AUSTRALIA, 1840 TO 1928.



EXPLANATION.—The values shown are those of the total Australian production of certain of the most important minerals in successive years from 1840 onwards.

The base of each small square represents an interval of one year, and the vertical height represents in the case of gold £1,000,000; in the case of silver and lead, zinc and copper £200,000; and in the case of iron, £40,000.

VALUES OF PRINCIPAL MINERALS PRODUCED—AUSTRALIA, 1840 TO 1928—
continued.



EXPLANATION.—The values shown are those of the total Australian production of certain of the most important minerals in successive years from 1840 onwards.

The base of each small square represents an interval of one year, and the vertical height represents in the case of coal and tin £200,000, and in the case of total mineral production £1,000,000.

(iv) *Tasmania*. During the year 1928 the production from local ores was taken as 7,112 tons, valued at £188,691, the principal producer being the Hercules-Rosebery, worked by the Electrolytic Zinc Co.

The Electrolytic Zinc Co. at Risdon operated on raw materials obtained partly from the West Coast district of Tasmania, but chiefly from Broken Hill in New South Wales. Production from other than Tasmanian ores in 1928 consisted of 44,004 tons of zinc valued at £1,199,596, and 152 tons of cadmium, valued at £34,437.

2. *World's Production*.—According to *The Mineral Industry* the world's production of zinc during the five years 1924–28 was as follows:—

ZINC.—WORLD'S PRODUCTION, 1924 TO 1928.

1924.	1925.	1926.	1927.	1928.
Tons. 1,004,600	Tons. 1,130,100	Tons. 1,226,100	Tons. 1,306,900	Tons. 1,407,700

The yields from the chief producing countries in 1928 were as given hereunder.

ZINC.—PRODUCTION, CHIEF COUNTRIES, 1928.

Country.	Production.	Country.	Production.
	Tons.		Tons.
United States	553,200	Canada	73,000
Belgium	206,000	Great Britain	55,400
Australia	168,200	Netherlands	26,500
Poland (a)	159,400	Japan	18,700
Germany	96,600	Spain	13,300
France	95,300	Mexico	11,000

(a) Including Upper Silesia.

The figures for Australia have been taken from returns supplied by the Australian Mines and Metals Association.

3. *Prices*.—During the four years 1911 to 1914, the London price of zinc averaged £23 15s. per ton, ranging from £21 in 1914 to £26 3s. 4d. in 1912. Owing to the heavy demand and other circumstances arising out of the war, the prices in 1915 and 1916 reached the very high average of £67 11s. 1d. and £72 1s. 5d. per ton respectively. For 1921 the average recorded was £25 16s. 11d.; for 1923, £33 1s. 2d.; for 1924, £33 14s. 7d.; for 1925, £36 12s. 6d.; for 1926, £34 2s. 1d.; for 1927 and 1928, the average fell to £28 10s. 3d. per ton.

§ 8. Iron.

1. *General*.—The fact that iron ore is widely distributed in Australia has long been known, and extensive deposits have been discovered from time to time at various places throughout the States, but the utilization of these deposits for the production of iron and steel is, at present, confined to New South Wales.

2. *Production*.—(i) *New South Wales*. The production from local ores only in 1928 amounted to 57,000 tons, valued at £312,000.

These figures do not, of course, represent the total production of pig iron in New South Wales, since a considerable quantity of ore raised in South Australia, and credited therefore to the mineral returns of that State, is treated in New South Wales. For the year ended 30th November, 1929, over 850,000 tons of iron ore were raised at the Iron Knob quarries in South Australia for the Broken Hill Proprietary Company's iron and steel works at Newcastle in New South Wales. A quantity of iron oxide is purchased by the various gasworks for use in purifying gas, and it is also to some extent employed

as a pigment, and in paper manufacture, the output in New South Wales being drawn chiefly from the deposits in the Port Macquarie, Milton, and Newcastle Divisions. During 1928 the iron oxide raised amounted to 4,658 tons, valued at £2,660.

(ii) *Other States.* Reference to the iron ore deposits in the other States will be found in preceding issues of the Official Year Book (see No. 22, page 779).

3. *Iron and Steel Bounties.*—During the year 1928–29 the bounties paid under the Iron and Steel Bounties Act on articles manufactured from locally produced materials were as follow:—fencing wire, £121,839; galvanized sheets, £102,650; wire-netting, £73,945; traction engines, £7,109.

4. *World's Production of Iron and Steel.*—The Australian production of iron and steel at present forms a very small proportion of the world's output. According to *The Mineral Industry*, the world's production of each commodity in the years specified for the principal countries was as follows:—

PIG IRON AND STEEL.—WORLD'S PRODUCTION, 1926 TO 1928.

Country.	Pig Iron.			Steel Ingots and Castings.		
	1926.	1927.	1928.	1926.	1927.	1928.
	Thousands of Tons.			Thousands of Tons.		
United States ..	39,373	36,566	38,156	48,294	44,935	51,544
Germany	9,491	12,870	11,618	12,147	16,090	14,285
France ..	9,281	9,170	9,928	8,255	8,090	9,238
Saar Territory ..	600	1,740	1,936	360	420	500
Belgium ..	3,315	3,650	3,825	3,150	3,640	3,870
Luxemburg ..	2,518	2,680	2,724	2,208	1,420	2,510
Austria ..	325	428	457	473	551	637
Italy ..	550	520	539	1,685	1,530	1,910
Spain ..	479	583	610	615	700	690
Czecho-Slovakia ..	1,080	1,240	1,400	1,316	1,661	2,100
Poland ..	322	608	662	776	1,223	1,414
Sweden ..	493	447	430	486	480	567
Russia ..	2,160	2,900	3,282	2,863	3,480	4,143
China ..	300	410	400	150	200	300
Japan ..	850	1,200	1,380	1,200	1,550	1,680
United Kingdom ..	2,458	7,294	6,611	3,497	9,170	8,525
India ..	902	910	1,010	450	550	440
Canada ..	815	766	1,083	777	870	1,239
Australia ..	450	410	420	360	420	500
Total—All Countries ..	77,460	84,281	86,760	90,931	98,781	108,109

The figures for Japan include Manchuria and Korea.

§ 9. Other Metallic Minerals.

Detailed information in regard to the occurrence and production of other metallic minerals in each of the States will be found in preceding issues of the Official Year Book, but this information cannot be included in the present issue.

§ 10. Coal.

1. *Production in each State.*—An account of the discovery of coal in each State will be found in preceding issues of the Year Book. (See No. 3, pp. 515–6.) The quantity and value of the production in each State and in Australia during the five years 1924 to 1928, are given in the table hereunder:—

COAL.—PRODUCTION, 1924 TO 1928.

Year.	N.S.W.	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
QUANTITY.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1924 ..	11,618,216	518,315	1,123,117	..	421,864	75,988	13,757,500
1925 ..	11,396,199	534,246	1,177,173	..	437,471	81,698	13,626,777
1926 ..	10,885,766	591,001	1,221,059	..	474,819	102,358	13,275,003
1927 ..	11,126,114	684,245	1,099,040	..	501,505	112,056	13,522,960
1928 ..	9,448,197	658,323	1,076,340	..	528,420	128,500	11,839,780
VALUE.							
	£	£	£	£	£	£	£
1924 ..	9,589,547	569,555	985,542	..	363,255	66,555	11,574,454
1925 ..	9,302,515	596,117	1,037,956	..	363,203	70,424	11,370,215
1926 ..	9,436,520	657,798	1,098,927	..	394,400	90,401	11,678,046
1927 ..	9,782,002	762,530	987,465	..	407,967	99,802	12,039,766
1928 ..	8,263,729	731,015	971,690	..	420,145	106,558	10,493,137

(a) Exclusive of brown coal, shown in next table.

The figures for Victoria quoted above are exclusive of brown coal, the quantity and value of which during the last five years were as follows :—

BROWN COAL.—PRODUCTION, VICTORIA, 1924 TO 1928.

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£
1924 ..	127,490	41,116	1927 ..	1,455,482	220,003
1925 ..	876,468	166,404	1928 ..	1,591,858	202,393
1926 ..	957,935	188,899			

2. Distribution and Production of Coal in each State.—(i) *New South Wales.*—Estimates of the quantity of merchantable coal available in the deposits in each State were given in preceding issues of the Official Year Book (see No. 20, pp. 752 *et seq.*), but considerations of space preclude the repetition of the information in the present issue.

The coal from the various districts differs considerably in quality—that from the Northern district being especially suitable for gas-making and household purposes, while the product of the Southern (Mawarra) and Western (Lithgow) is an excellent steaming coal. At the present time the Greta coal seams are being extensively worked between West Maitland and Cessnock, and the stretch of country, covering a distance of 15 miles, is now the most important coal-mining district in Australasia.

The table hereunder gives the yields in each of the three districts during the five years 1924 to 1928 :—

COAL.—PRODUCTION IN DISTRICTS, NEW SOUTH WALES, 1924 TO 1928.

District.	1924.	1925.	1926.	1927.	1928.
	Tons.	Tons.	Tons.	Tons.	Tons.
Northern ..	8,077,689	7,637,953	7,257,598	7,145,116	5,978,480
Southern ..	1,973,855	2,052,963	2,024,520	2,155,461	1,817,225
Western ..	1,566,672	1,705,283	1,603,648	1,825,537	1,652,492
Total ..	11,618,216	11,396,199	10,885,766	11,126,114	9,448,197

The output in 1927 has been exceeded on two occasions only i.e., in 1924 and 1925, but the value of the production in 1927, i.e., £9,782,000, is the highest yet recorded. Although the mines and plant are capable of a larger production than in the record year 1924, the output for 1928 was the lowest since 1919. The depression in the coal trade was not peculiar to Australia, but was experienced in many countries.

(ii) *Victoria.* (a) *Black Coal.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district.

The output of black coal in Victoria during the last five years was as follows :—

BLACK COAL.—PRODUCTION, VICTORIA, 1924 TO 1928.

Year.	State Coal Mine.	Other Coal Mines.	Total Production.	Value.
	Tons.	Tons.	Tons.	£
1924	452,032	66,283	518,315	569,555
1925	468,146	66,100	534,246	596,117
1926	531,869	59,132	591,001	657,798
1927	610,618	73,627	684,245	762,530
1928	600,931	57,392	658,323	731,015

Amongst the other coal mines the chief producers in 1928 were the Sunbeam Colliery at Korumburra, with 25,244 tons; the South Gippsland Coal Mining Co. at Kilcunda, with 14,622 tons; and the Howitt at Outtrim, with 6,433 tons.

(b) *Brown Coal.*—(1) *General.* Some account of the brown coal deposits and of the operations of the State Electricity Commission in connexion therewith will be found in preceding Official Year Books (see No. 22, page 785), but it is not proposed to repeat this information in the present issue. The brown coal produced in Victoria was raised chiefly at the State Open Cut at Yallourn, where the output in 1928 amounted to 1,426,307 tons, while 165,551 tons were raised at the old open cut at Morwell. There was no production from the other areas in 1928.

(2) *Production of Briquettes.* The briquetting plant started operations in November, 1924, and the output for the year 1928-29 was 141,064 tons. It should be noted, however, that the original Yallourn plant is what is known as a “half factory,” and economic production necessitates an extension thereof. This work is now proceeding. The Yallourn briquettes are considered to be equal in quality to those produced in the best German factories.

(3) *Distillation Products.* A new industry is in contemplation for the distillation of oil, motor spirit, and other valuable substances from brown coal, experiments in this direction on a small scale having yielded very satisfactory results.

(iii) *Queensland.* The distribution of production during the year 1928 was as follows :—

COAL PRODUCTION.—QUEENSLAND, 1928.

Districts.	1928.	Districts.	1928.
	Tons.		Tons.
Ipswich	583,990	Rockhampton (Central)	51,113
Darling Downs	98,024	Clermont	54,847
Wide Bay and Maryborough	94,031	Bowen	161,813
Bundaberg	..	Mackay	214
Mount Morgan	9,088	Mount Mulligan (Chillagoe)	23,220
		Total	1,076,340

The output in 1928 was about 145,000 tons lower than that for 1926, which was the highest recorded. There were 39 collieries operating in the Ipswich district, 8 in the Darling Downs, 8 in the Maryborough area, 2 in Mount Morgan district, 4 in Clermont district, 2 in Rockhampton district, 1 in Chillagoe district, and 3 in the Bowen district. State coal mines are in operation at Collinsville in the Bowen field, at Mount Mulligan in the Chillagoe field, and at Baralaba and Styx in the Central area.

(iv) *South Australia.* So far no coal has been worked in South Australia (see Official Year Book No. 22, page 786).

(v) *Western Australia.* The production from the five collieries operating at Collie amounted in 1928 to 528,420 tons. The output was about 27,000 tons in excess of that for the preceding year, and if the demand warranted it, the yield could be considerably increased. Considerably more than half of the output in 1928 was supplied to the railways. The deposits at Wilga were not worked during the year.

(vi) *Tasmania.* The production in 1928 amounted to 125,000 tons, about 13,000 tons in excess of the total for 1927. Over 58,000 tons of the total output in 1928 were contributed by the Cornwall Colliery; 34,000 tons by the Mt. Nicholas; and 18,000 tons by the Jubilee at St. Marys.

(vii) *Australia's Coal Reserves.* A summary of the information available in regard to estimated actual and possible reserves of coal for Australia as a whole was given in tabular form on p. 755 of Official Year Book No. 20, but considerations of space preclude its repetition in the present issue.

3. Production in Various Countries.—The total known coal production of the world in 1928 amounted to about 1,430 million tons, towards which Australia contributed about 13½ million tons, or 0.9 per cent. The following tables show the production of the chief British and foreign countries during each of the last three years where the returns are available. The comparatively small yield for Great Britain in 1926 was due to the unsettled conditions prevailing in the coal industry during that year.

COAL PRODUCTION.—BRITISH EMPIRE, 1926 TO 1928.

Year.	Great Britain.	British India.	Canada.	Australia.	New Zealand.	Union of S. Africa.
BLACK COAL.						
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1926 ..	126,278,500	21,009,200	11,502,500	13,275,000	1,196,400	12,745,500
1927 ..	251,232,300	22,082,300	12,145,700	13,523,000	1,290,500	12,381,700
1928 ..	237,471,900	22,542,900	12,241,400	11,839,800	1,348,700	12,407,500
BROWN COAL, LIGNITE.						
1926 ..	..	..	3,210,100	957,900	1,044,000	..
1927 ..	..	..	3,414,000	1,455,500	1,076,200	..
1928 ..	640	..	3,432,100	1,591,900	1,088,000	..

COAL PRODUCTION.—FOREIGN COUNTRIES, 1926 TO 1928.

Year.	Germany.	Austria.	Hungary.	Belgium.	France. (b)	Czecho- Slovakia.	Jugoslavia.
BLACK COAL.							
	Tons.	Tons.	Tons	Tons.	Tons.	Tons.	Tons.
1926 ..	143,001,000	154,800	813,800	24,860,700	50,579,800	13,953,100	187,800
1927 ..	151,173,500	172,800	773,400	27,115,800	50,960,800	13,794,900	283,200
1928 ..	148,492,900	198,900	770,900	27,107,800	50,554,500	14,330,300	351,900
Year.	Poland.	Nether- lands.	Russia.	Japan.	China.	United States.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
1926	35,182,800	8,471,600	23,119,500	30,930,200	22,000,000	587,325,400	
1927	37,482,600	9,175,900	28,335,700	33,001,000	18,000,000	533,802,600	
1928	39,974,900	10,747,600	34,657,100	33,325,400	(c)	514,368,800	

BROWN COAL, LIGNITE.

Year.	Germany.	Austria.	Hungary.	Belgium.	France.	Czecho-Slovakia.	Jugoslavia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1926 ..	136,952,900	2,911,000	5,730,300	..	1,044,400	18,223,200	3,887,600
1927 ..	148,126,900	3,016,700	6,144,800	..	1,050,400	19,310,800	4,388,100
1928 ..	163,598,900	3,211,000	6,405,800	..	1,046,900	20,128,400	4,620,300

Year.	Poland.	Nether-lands.	Russia.	Japan.	China.	United States.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1926	74,800	207,900	2,256,800	158,600	..	(a)
1927	77,200	198,200	2,590,900	175,800	..	(a)
1928	72,400	193,600	(a)	145,400	..	(a)

(a) Included with black coal. (b) Exclusive of Saar District, which produced 13,464,800 tons in 1926; 13,391,100 tons in 1927; and 12,899,700 tons in 1928. (c) Not available.

4. Exports.—The exports of coal from Australia are chiefly confined to New South Wales.

The total quantity of coal of Australian production (exclusive of bunker coal) exported to other countries in 1928-29 was 347,000 tons, valued at £429,000, of which 311,608 tons were exported from New South Wales, and 34,723 tons from Queensland.

The total coal exports from New South Wales in 1928 amounted to 3,346,000 tons, valued at £4,041,000.

Of the total exports of coal from New South Wales in 1928, about 86 per cent., or 2,886,000 tons, were shipped from the port of Newcastle. Victoria took 1,129,000 tons, South Australia 711,000 tons, other Australian States 180,000 tons, New Zealand 262,500 tons, while 163,000 tons went to United Kingdom, 50,000 tons to the Philippine Islands, 41,000 tons to Germany, 39,000 tons to Fiji, and 27,000 tons to India. The figures quoted include bunker coal.

During the year 1928 the exports from Port Kembla and Bellambi to other States amounted to 94,600 tons, while 19,000 tons were sent to New Caledonia. The coal shipped from Sydney went principally to New Guinea and the Gilbert and British Solomon Islands. For the twelve months ended 30th June, 1928, about 14,500 tons of coal were dispatched to interstate ports from the jetty at Catherine Hill Bay, near Newcastle.

The distribution of the total output from New South Wales collieries during the last five years was as follows, the particulars given of quantity exported including coal shipped as bunker coal :—

COAL.—DISTRIBUTION OF OUTPUT, NEW SOUTH WALES, 1924 TO 1928.

Year.			Exports to Australian Ports.	Exports to Foreign Ports.	Local Consumption.	Total.
			Tons.	Tons.	Tons.	Tons.
1924	..	..	3,096,881	2,317,063	6,204,272	11,618,216
1925	..	..	3,001,823	1,769,215	6,625,161	11,396,199
1926	..	..	2,740,570	1,797,257	6,347,939	10,885,766
1927	..	..	2,651,492	1,687,716	6,786,906	11,126,114
1928	..	..	2,209,981	1,135,572	6,102,644	9,448,197

For the period of five years shown in the table above, 25 per cent. of the total output was exported to other States, 16 per cent. was sent overseas, and 59 per cent. was consumed locally. Since 1921 the home consumption has increased from 49 per cent. to 59 per cent. of the total output.

The figures quoted in the table above are given on the authority of the New South Wales Mines Department.

5. Consumption in Australia.—An estimate of the consumption of coal in Australia may be arrived at by adding the imports to the home production, and deducting the exports (including bunker coal taken by oversea vessels). The following table shows the consumption computed in the manner specified for the last five years :—

COAL.—CONSUMPTION, AUSTRALIA, 1924 TO 1928.

Year.		Quantity of Coal Consumed.		
		Home Produce.	Produce of Other Countries.	Total.
		Tons.	Tons.	Tons.
1924	.. .. .	11,395,631	9,234	11,404,865
1925	.. .. .	12,536,179	9,137	12,545,316
1926	.. .. .	12,338,644	26,080	12,364,724
1927	.. .. .	13,378,301	23,563	13,401,864
1928	.. .. .	12,273,727	17,870	12,291,597

The bunker coal taken away in 1928 was estimated at 846,000 tons. Figures for brown coal produced in Victoria are included in the total for home produce. The whole of the oversea imports in 1928 came from the United Kingdom.

6. Prices.—(i) *New South Wales.* The price of New South Wales coal depends on the district from which it is obtained, the northern district coal always realizing a much higher rate than the southern or western product. The average price on the mine in each district and for the State as a whole during the last five years was as follows :—

COAL.—PRICES, NEW SOUTH WALES, 1924 TO 1928.

Year.		Northern District.	Southern District.	Western District.	Average for State.
		Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1924	.. ..	17 8	16 2	11 2	16 7
1925	.. ..	17 7	15 11	11 1	16 4
1926	.. ..	18 10	16 5	11 9	17 4
1927	.. ..	19 2	16 8	12 6	17 7
1928	.. ..	19 0	16 6	13 1	17 6

(ii) *Victoria.* In Victoria the average price of coal in 1924 was 21s.; in 1925, 22s. 4d.; in 1926, 22s. 3d.; in 1927, 22s. 3d.; and in 1928, 22s. 2d. per ton. These averages are exclusive of brown coal, the production of which in 1928 was valued at 2s. 7d. per ton.

(iii) *Queensland.* Prices in the principal coal-producing districts during the last five years were as follows :—

COAL.—PRICES, QUEENSLAND, 1924 TO 1928.

District.	Value at Pit's Mouth.				
	1924.	1925.	1926.	1927.	1928.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
Ipswich	16 8	16 7	17 2	17 0	16 11
Darling Downs	18 10	18 8	19 2	19 6	19 5
Wide Bay and Maryborough	24 3	24 3	24 2	23 9	23 8
Bundaberg .. ..	..	..	24 7	23 8	..
Mount Morgan .. ..	..	..	13 11	12 8	12 10
Rockhampton	15 0	16 1	17 10	22 10	23 3
Clermont	11 0	12 0	13 6	13 11	14 1
Bowen	16 5	16 0	16 2	16 3	15 2
Mackay .. ..	..	..	..	29 8	24 4
Mount Mulligan (Chillagoe)	29 6	31 3	30 4	32 0	31 11
Average for State ..	17 8	17 8	18 0	18 0	18 0

The readjustment of prices and wages in the industry was responsible for the increases in the averages during the last four years.

(iv) *Western Australia.* The average price of the Collie (Western Australia) coal during the last five years was as follows :—In 1924, 17s. 3d.; in 1925, 16s. 7d.; in 1926, 16s. 7d.; in 1927, 16s. 3d.; and in 1928, 15s. 11d. per ton.

(v) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania for the five years 1924 to 1928 was :—In 1924, 17s. 6d.; in 1925, 17s. 3d.; in 1926, 17s. 8d.; in 1927, 17s. 10d.; and in 1928, 16s. 7d. per ton.

7. Prices in the United Kingdom.—During the five years 1924 to 1928 the average selling value of coal at the pit's mouth in the United Kingdom was :—In 1924, 18s. 10d.; in 1925, 16s. 4d.; in 1926, 19s. 6d.; in 1927, 14s. 7d.; and in 1928, 12s. 10d. per ton.

8. Employment and Accidents in Coal Mining.—The number of persons employed in coal mining in each of the States during the year 1928 is shown below. The table also gives the number of persons killed and injured, with the proportion per 1,000 employed, while further columns are added showing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations. A further table gives the rate of fatalities during the last five years.

According to the report of the Chief Inspector of Mines the average death-rate per 1,000 miners from accidents in coal mines in Great Britain during the quinquennium 1924-28 was 1.04, the rates varying between 1.09 in 1927, and 0.98 in 1924, while, as shown in the table following, the rate for Australia for the same period was 1.01. In the United States during the five years 1923-27 the death rate per 1,000 employees averaged 4.9 for bituminous coal miners, and 3.7 for anthracite miners. Rates for other coal-producing countries for the same period were—Canada, 2.6; South Africa, 3.4; Germany, 2.2; Spain, 1.7; Belgium, 1.1; France, 1.0. In comparing these rates, allowance must be made for the circumstance that the methods of calculation are not identical in all countries.

COAL MINING.—EMPLOYMENT AND ACCIDENTS, 1928.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1,000 Employed.		Tons of Coal raised for each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ..	21,468	14	103	0.65	4.80	674,900	91,700
Victoria ..	2,224	2	5	0.90	2.25	1,125,100	450,000
Queensland ..	2,676	7	99	2.62	37.00	153,800	10,900
Western Australia ..	798	1	115	1.25	144.11	528,400	4,600
Tasmania ..	356	..	2	..	5.62	..	64,300
Total ..	27,522	24	324	0.87	11.77	559,700	41,500

Owing to lack of uniformity in the definition of "injury," the figures relating to persons injured possess little comparative value.

The next table shows the average number of miners employed, number of fatalities, and rate per 1,000 during the quinquennium 1924-28:—

COAL MINING.—FATALITIES, 1924 TO 1928.

State.	Average No. of Coal Miners.	Average No. of Fatal Accidents.	Rate per 1,000 Employed.
New South Wales ..	23,564	23.4	0.99
Victoria ..	2,507	3.0	1.20
Queensland ..	2,838	3.2	1.13
Western Australia ..	717	0.6	0.84
Tasmania ..	317	..	..
Total ..	29,943	30.2	1.01

For Queensland the rate for the quinquennium 1923-27 was 0.78, as against 17.6 for the five years 1921-5, when the figures were swollen by the inclusion in 1921 of the 75 deaths in the disaster at Mount Mulligan.

§ 11. Coke.

Notwithstanding the large deposits of excellent coal in Australia, there was, prior to the war, a fairly considerable amount of coke imported from abroad. During recent years, however, a high standard of excellence has been attained in the local product, and the necessity for import has to a large extent disappeared. During the year 1928-29 the coke imported amounted to 26,200 tons, of which 23,400 tons were obtained from the United Kingdom and 2,800 tons from Germany, the bulk of the product being taken by South Australia for use in the ore-treating works at Port Pirie. The table hereunder gives the production in New South Wales during the last five years:—

COKE.—PRODUCTION, NEW SOUTH WALES, 1924 TO 1928.

		1924.	1925.	1926.	1927.	1928.
Quantity ..	tons	564,372	609,418	597,663	709,342	520,201
Value, total ..	£	932,926	942,448	940,416	1,131,335	852,739
Value, per ton ..	..	33s. 1d.	30s. 11d.	31s. 6d.	31s. 10d.	32s. 9d.

The figures quoted refer to metallurgical coke, the product of coke ovens, and are exclusive of coke produced in the ordinary way at gas works. As regards both tonnage and value the production in 1927 was the highest recorded.

During recent years the industry has made considerable progress, and with the development of local iron and steel works, as well as metal refineries and smelting establishments, its future prospects ought to be assured.

A small quantity of coke is made in Queensland, the quantity returned in 1928 being 4,058 tons, valued at £6,616. A certain amount is obtained from outside sources, but the import in 1928 was small. The following table shows the amount manufactured locally during the last five years:—

COKE.—PRODUCTION, QUEENSLAND, 1924 TO 1928.

Year.	1924.	1925.	1926.	1927.	1928.
Quantity .. tons	7,116	5,384	6,191	4,196	4,058

In order to avoid duplication with coal values the returns for coke have not been included in the general tables of mineral production in the early part of this chapter.

§ 12. Oil Shale and Mineral Oil.

Reference to the deposits of oil shale as well as to the efforts put forward in connexion with the search for mineral oil in Australia will be found in Official Year Book No. 22, pages 791 to 793. Tasmania was the sole producer of oil shale in 1928, the quantity raised being about 2,600 tons. So far mineral oil has not been produced in commercial quantities, but hopes are entertained of ultimate success. The Commonwealth Government has provided a bounty to encourage the search for oil and skilled advice in connexion with boring, etc., is given by the Commonwealth Geologist and staff.

§ 13. Other Non-metallic Minerals.

A more or less detailed statement regarding the occurrence and production of other non-metallic minerals is given in preceding Official Year Books (see No. 22, pages 793 to 796), but this information cannot be repeated in the present volume. The tables of quantity and value in § 1 of this Chapter will, however, show the production for each State during the year 1928.

§ 14. Gems and Gemstones.

1. **Diamonds.**—It is difficult to secure accurate returns in connexion with the production of precious stones, but the yield of diamonds in 1928 in New South Wales was estimated at 28 carats, valued at £60, while the total production to the end of 1928 is given at 202,459 carats, valued at £144,816. The yield in 1928 was obtained principally at Copeton in the Tingha division, the gems being recovered from tail races used in tin mining. There was no production from the other States in 1928.

2. **Sapphires.**—The production of sapphires in New South Wales during 1928 was returned as 1,707 ozs., valued at £2,859, obtained wholly at Sapphire and Nullamanna in the Inverell division. It is probable that the output is understated owing to the difficulty of obtaining accurate returns from individual miners and prospectors. A fair quantity of machine stones, zircon and corundum, was also raised, but these were unmarketable. Production in 1928 generally was restricted owing to the unfavourable market.

In Queensland only a few noteworthy gems were found in 1928, the principal being a large blue valued at £60. The total production in 1928 was valued at £4,130.

3. **Precious Opal.**—The estimated value of the opal won in New South Wales during the year 1928 was £11,000, wholly obtained on the Lightning Ridge and Grawin fields. Some very fine stones are at times obtained, one weighing 5 ozs. and valued at £300 being recovered in 1911. Three finds of large stone were made in 1928, the gems weighing 790, 590, and 232 carats respectively, and showing fine fire and lustre. Occasionally, black opals of very fine quality are found,

one specimen from the Wallangulla field, weighing $6\frac{1}{2}$ carats, being sold in 1910 for £102, while in the early part of 1920 a specimen realized £600. It is stated that this locality is the only place in the world where the "black" variety of the gem has been found. The total value of opal won in New South Wales since the year 1890 is estimated at £1,586,000, but it is a well known fact that fine pieces of the gem have been found and sold privately without notification to the Mines Department.

Small quantities of precious opal are found in the Beechworth district in Victoria.

The opaliferous district in Queensland stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1928 was estimated at £600, and up to the end of that year at about £184,000. These figures are, however, merely approximations, as large quantities of opal, of which no record is obtained, are disposed of privately.

At the Coober Pedy opal field situated in the Stuart Range in South Australia, the maximum number of miners engaged in 1928 was 90, the estimated value of the production being £11,540. The field is extremely prolific, a large quantity of precious white opal having been raised therefrom, while only a small portion of the known opal-bearing area has been thoroughly tested.

According to a report a few years ago by the Australian Trade Commissioner in the East there is a good sale for the gems in China. It is stated that there is no difficulty in cutting and polishing, as the Chinese method of dealing with jade, dating back many centuries, can also be applied to opal.

4. Other Gems.—Various other gems and precious stones have from time to time been discovered in the different States, the list including agates, amethysts, beryls, chialtolite, emeralds, garnets, olivines, moonstones, rubies, topazes, tourmalines, turquoises, and zircons. In Western Australia 17,564 carats (rough) of emeralds, valued at £910, were produced during 1928 in the Cue district on the Murchison gold-field. Although the stones recovered so far are of low value, it is expected that the quality will improve as the workings deepen.

§ 15. Numbers Engaged, Wages Paid, and Accidents in Mining.

1. Total Employment in Mining.—The number of persons engaged in the mining industry in Australia fluctuates according to the season, the price of industrial metals, the state of the labour markets, and according to the permanence of new finds, and the development of the established mines. During the year 1928 the number so employed was as follows :—

NUMBER OF PERSONS ENGAGED IN MINING, 1928.

State.	Number of Persons engaged in Mining for—						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal.	Other.	
New South Wales ..	736	4,666	3	1,275	21,468	1,711	29,859
Victoria ..	655	2	..	118	2,224	46	3,045
Queensland ..	343	282	517	954	2,676	511	5,283
South Australia ..	30	..	14	..	..	549	593
Western Australia ..	3,863	12	10	119	798	51	4,853
Tasmania ..	47	627	1,181	1,113	356	454	3,778
Northern Territory ..	12	..	..	95	..	53	160
Australia ..	5,686	5,589	1,725	3,674	27,522	3,375	47,571

Included in the figures for "other" in South Australia were 187 engaged in mining for iron, 93 gypsum miners, 151 salt gatherers, and 80 opal miners. The Tasmanian figures include 228 osmiridium miners, and those for the Northern Territory 50 mica miners.

NUMBERS ENGAGED, WAGES PAID, AND ACCIDENTS IN MINING. 579

The following table shows the number of persons engaged in mining in Australia during each of the years 1891, 1901, and 1928, together with the proportion of the total population so engaged :—

NUMBER ENGAGED IN MINING PER 100,000 OF POPULATION, 1891, 1901, AND 1928.

State.	1891.		1901.		1928.	
	Miners employed.	No. per 100,000 of Popu-lation.	Miners employed.	No. per 100,000 of Popu-lation.	Miners employed.	No. per 100,000 of Popu-lation.
New South Wales	30,604	2,700	36,615	2,685	29,859	1,227
Victoria	24,649	2,151	28,670	2,381	3,045	174
Queensland	11,627	2,934	13,352	2,664	5,283	580
South Australia	2,683	834	7,007	1,931	593	103
Western Australia	1,269	2,496	20,895	11,087	4,853	1,215
Tasmania	3,988	2,695	6,923	4,017	3,778	1,783
Northern Territory .. ..	..	..	..	..	160	3,803
Australia	74,820	2,341	113,462	2,992	47,571	757

The general falling-off since 1901 is largely due to the causes mentioned in §1.6 *ante*.

2. Wages Paid in Mining.—Information regarding rates of wages paid in the mining industry, which in earlier issues of the Year Book was given in this chapter, is now contained in the Labour Report issued by this Bureau.

3. Accidents in Mining, 1928.—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1928 :—

MINING ACCIDENTS, 1928.

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Australia.
KILLED.								
Coal ..	14	2	7	..	1	..	..	24
Copper ..	..	..	..	..	..	1	..	1
Gold ..	..	2	..	..	2	..	..	4
Silver, lead, and zinc ..	8	..	..	..	..	..	..	8
Tin ..	..	..	1	..	..	..	..	1
Other minerals ..	..	..	..	..	1	..	..	1
Total ..	22	4	8	..	4	1	..	39

INJURED.

Coal ..	103	5	99	..	115	2	..	324
Copper ..	..	..	3	..	..	17	..	20
Gold ..	..	1	2	..	214	..	..	217
Silver, lead, and zinc ..	41	..	4	..	..	4	..	49
Tin ..	2	..	1	..	1	5	..	9
Other minerals ..	..	..	..	30	1	..	..	31
Total ..	146	6	109	30	331	28	..	650

The number killed in mining accidents in 1928 was considerably less than that for 1921 when 132 deaths were recorded, the figures for the earlier year being swollen by the 75 fatalities in the colliery disaster at Mount Mulligan in Queensland.

§ 16. Government Aid to Mining.

1. *Commonwealth.*—Assistance to mining is given by the Commonwealth under the provisions of the *Precious Metals Prospecting Act* 1926, and the *Petroleum Prospecting Acts* of 1926, 1927, and of 1928.

The first-mentioned Act provides for a sum of £40,000, of which £15,000 is to be expended in the Northern Territory, and the balance is to be allocated to the States in such proportions as the Minister determines. At the 30th June, 1930, the expenditure amounted to £13,031. The States of South Australia and Western Australia had made no claim on the fund at the date specified.

Under the *Petroleum Prospecting Act* 1926–1927 a trust account of £160,000 was established to assist in the search for oil. The Minister was authorized to make advances out of the money standing to the credit of this account to persons or companies engaged in the search for oil, and to assist persons, companies, or State Governments to make geological surveys. The *Petroleum Prospecting Act* of 1928 provides a further sum of £50,000. The Government has decided to discontinue the granting of subsidies for deep drilling and to confine its attention to assistance in the carrying out of geological surveys and scout boring. A palæontologist has been appointed to give expert advice.

To provide for geophysical prospecting in Australia, a sum of £32,000 has been made available by the Commonwealth Government in conjunction with the Empire Marketing Board.

2. *New South Wales.*—The chief aid given in this State is in the direction of assistance to prospectors. Up to the end of 1928 the total sum expended in this manner amounted to £601,000, of which £13,837 was advanced in 1928. A sum of £500 was made available during the year for the purpose of assisting in the erection of crushing batteries or reduction plants, but no advances were made therefrom. The reward for the discovery of new mineral fields within the State has been increased from £500 to £1,000, with provision for sums of £250 and £500 in respect of fields not large enough to qualify for the full amount, and the conditions have been made more liberal. A sum of £5,000 has been made available by the Commonwealth Government under the provisions of the *Precious Metals Prospecting Act* to assist in the search for precious metals in the event of the prospecting vote becoming exhausted within the financial year.

3. *Victoria.*—During the year 1928 expenditure in connexion with mining development amounted to £27,778, of which £3,723 represented advances to miners, £1,300 aid to mining companies, while £17,263 was expended on boring, £107 on covering abandoned shafts, £2,621 on testing plants, and £2,764 on geological surveys.

4. *Queensland.*—State assistance to the mining industry in 1928–29 amounted to £13,866, of which £9,005 was advanced to prospectors, and £4,302 was expended in connexion with State Coal Mines.

State coal mines are in operation at Bowen, Styx, Baralaba, and Mount Mulligan. There is also a State Assay Office at Cloncurry at which assays and sampling are carried out for the public, and State batteries are maintained at Kidston, Charters Towers, Irvinebank, and Bamford.

5. **South Australia.**—Aid is given to the mining industry under the terms of the Mining Act of 1893, and previous measures. Up to the end of 1928 the total amount of subsidy paid was £68,482, of which £13,569 has been repaid, and £4,549 written off, leaving a debit of over £50,000. Portion of this amount is represented by machinery that has fallen into the hands of the Government. Repayments must be provided from profits, but in only two instances have the profits enabled a full return to be made. The State maintains batteries and cyanide works at Mount Torrens, Peterborough, Tarcoola, and Glenloth, and assays for public purposes are made at the School of Mines.

6. **Western Australia.**—Under the Mining Development Act of 1902 assistance was granted in 1928 in accordance with the subjoined statement :—Advances in aid of mining work and equipment of mines with machinery, £13,591; aid to prospectors, £6,222; subsidies on stone crushed for the public, £24; total, £19,837. In addition to the foregoing the vote was also charged with rebates on water supplied to the amount of £49,231. The industry has been further assisted by Government guarantees to banks on behalf of various companies, and at the end of 1928 the liability in this respect amounted to £51,500.

In 1928 there were 22 State batteries in operation. The amount expended thereon up to the end of 1928 was £91,981 from revenue and £320,584 from loan, giving a total of £412,565. The working expenditure up to the end of 1928 exceeded the revenue by £169,070. The total value of gold and tin recovered to the end of 1928 at the State plants was £6,194,451, resulting from the treatment of 1,474,367 tons of gold ore and 80,935 tons of tin ore, together with a small amount from residues. Free assays and determinations of mineral values for prospectors are made at the Kalgoorlie School of Mines.

7. **Tasmania.**—Aid to Mining in 1928 amounted to £3,638, of which £2,646 represented assistance and sustenance to prospectors. The amount received from ore sales was £243, the bulk of which was paid to tributers. Receipts amounted to £1,046, included in which was a sum of £837 received from the Renison Bell Co.

Tributers' assays are made at a nominal charge, and all tribute surveys are carried out free of charge by the Assay and Survey Office at Zeehan.

8. **Northern Territory.**—During the year 1927–28 a sum of £171 was expended on State aid to mining, £74 being granted to prospectors for gold, and £97 to prospectors for tin.

The Government maintains a battery at Marranboy, and the Government Assayer makes free assays for prospectors, and arranges for the sampling, storage, and sale of ores.

§ 17. Commonwealth Government Control of Industrial Metals.

The proclamation under the Customs Act prohibiting the exportation of metals without the consent of the Minister for Trade and Customs was revoked on the 13th October, 1927.

§ 18. Metallic Contents of Ores, etc., Produced and Exported.

1. Local Production.—According to returns compiled from various sources by the Australian Mines and Metals Association the quantities of the principal metals (exclusive of gold) extracted in Australia during the five years 1924 to 1928 were as follows :—

REFINED METALS PRODUCED IN AUSTRALIA, 1924 TO 1928.

Metal.			1924.	1925.	1926.	1927.	1928.
Silver ..	..	ozs.	7,631,213	8,573,506	8,946,218	9,390,070	8,053,251
Lead, pig ..	..	tons	126,625	146,129	150,460	164,480	155,076
Zinc ..	..	tons	46,372	45,698	47,356	49,155	50,223
Copper ..	..	tons	14,100	10,984	11,148	9,564	11,858
Tin ..	..	tons	3,167	3,171	3,188	2,989	3,133

The local production of pig iron during the quinquennium 1923-27 ranged between 330,000 tons in 1923, and 517,000 tons in 1927. Complete information for the year 1928 was not available.

2. Metallic Contents of Ores, Concentrates, etc., Exported.—The estimated metallic contents of ores, concentrates, etc., exported during the five years 1924 to 1928 are given in the following table :—

METALLIC CONTENTS OF ORES, CONCENTRATES, ETC., EXPORTED, 1924 TO 1928.

Metal.		Contained in—	1924.	1925.	1926.	1927.	1928.
Silver	ozs.	Lead—Silver—Gold Bullion	158,361	189,223	..	..	..
		Lead Concentrates and Ores	90,380	850,552	190,647	615,484	117,846
		Zinc Concentrates and Ores	1,941,507	1,270,166	1,206,313	1,640,891	1,453,396
		Copper Ores	51,942	..	..	..	..
		Total	2,242,170	2,309,941	1,896,960	2,256,375	1,571,242
Lead	tons	Lead—Silver—Gold Bullion	1,808	2,751	2,483	488	..
		Lead Concentrates and Ores	4,852	19,651	7,174	12,115	2,221
		Zinc Concentrates and Ores	19,859	12,423	13,943	14,198	12,726
		Total	26,519	34,825	23,600	26,801	14,947
Zinc	tons	Lead Concentrates and Ores	384	366	529	579	77
		Zinc Concentrates and Ores	122,305	79,996	94,043	111,755	117,858
		Total	122,689	80,362	94,572	112,334	117,935
Copper	tons	Ores, Matte, etc. ..	875	864	1,112	1,597	1,989
Tin	tons	Concentrates and Ores ..	4	..	1	12	..

§ 19. Oversea Exports of Ores, Metals, etc.

The following table shows the quantity and value of the principal oversea exports of ores, concentrates, and metals, the produce of Australia, together with the countries to which the respective products were forwarded, for the year 1928-29 :—

OVERSEA EXPORTS OF AUSTRALIAN ORES, METALS, ETC., 1928-29.

Article.	Total Exports.	Exports to—						
		United Kingdom.	United States.	Belgium.	Germany.	Japan.	New Zealand.	Other Countries.
QUANTITY.								
Ores—	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
Copper	45,239	27,116	9,870	726	7,527	..	..	..
Silver and Silver-lead	107,705	..	358	95,403	11,944	..	..	..
Iron	880,024	..	559,740	..	..	24	..	(a) 320,260
Concentrates—								
Silver and Silver-lead	121,680	..	..	89,500	32,180	..	..	..
Zinc	3,815,263	2,426,978	..	1,099,004	44,825	11,707	..	(b) 232,749
Cadmium—Blocks, Ingots, etc. ..	3,557	776	..	220	575	160	..	(c) 1,826
Copper—								
Matte	74,067	..	..	74,067	..	..	..	..
Ingot	57,904	42,037	789	15,000	18	..	60	..
Tin—Ingot	25,634	7,956	13,440	..	12	..	4,211	15
Lead—								
Matte	39,930	39,930	..	..	..	..	..	..
Pig	2,852,621	2,032,191	..	616,737	66,104	85,932	18,130	(d) 33,527
Zinc—Bars, Blocks, etc.	652,928	174,151	..	50,004	162,371	265,893	..	509
(e)Platinum, Osmium, etc.	oz. 693	oz. 448	oz. ..	oz. ..	oz. 245	oz. ..	oz. ..	..
Gold—								
Bar, Dust, etc. ..	10,821	533	..	..	14	..	..	(f) 10,274
Silver—								
Bar, Ingot, etc. ..	7,741,263	4,277	..	..	312	..	1,262	7,735,412

VALUE—£.

Ores—								
Copper	35,356	26,534	5,410	420	2,992	..	..	..
Silver and Silver-lead	70,605	..	526	64,707	5,372	..	..	..
Iron	28,880	..	18,070	..	..	1	..	10,809
Concentrates—								
Silver and Silver-lead	89,360	..	..	61,104	28,256	..	..	..
Zinc	889,881	562,063	..	263,768	7,182	4,212	..	52,666
Cadmium—Blocks, Ingots, etc. ..	41,281	9,256	..	2,384	6,412	2,508	..	20,721
Copper—								
Matte	94,023	..	..	94,023	..	..	..	..
Ingot	225,029	166,451	1,893	56,315	73	..	257	..
Tin—Ingot	252,636	87,111	148,351	..	120	..	46,845	209
Lead—								
Matte	15,820	15,820	..	..	..	..	..	..
Pig	3,217,570	2,299,470	..	686,784	71,531	100,240	21,763	37,782
Zinc—Bars, Blocks, etc.	913,181	243,108	..	70,000	227,095	372,270	..	708
Platinum, Osmium, etc.	17,688	11,100	..	..	6,588	..	..	..
Gold—								
Bar, Dust, etc. ..	42,340	2,275	..	..	59	..	..	40,006
Silver—								
Bar, Ingot, etc. ..	908,971	497	..	..	34	..	161	908,279

(a) Netherlands. (b) France. (c) France, 906 cwt.; Sweden, 920 cwt. (d) Hong Kong, 18,891 cwt.; South Africa, 12,221 cwt.; Philippines, 2,329 cwt. (e) Mainly osmiridium and platinum produced in Tasmania and New South Wales. (f) India.

CHAPTER XXII.

MANUFACTURING INDUSTRY.

[NOTE.]—For the year 1922-23 the Queensland, Western Australian and Tasmanian year ended 31st December, 1922, and that of the three remaining States ended 30th June, six months later. In 1923-24 Tasmania adopted the year ended 30th June, and Queensland fell into line during 1924-25. Western Australia made the change over in 1925-26, but included particulars for the eighteen months ended 30th June, 1926.

In all tables relating to employees—except where specially mentioned—"Number of Employees" includes working proprietors.

§ 1. Number and Classification of Factories.

1. General.—The number of factories in each State does not necessarily furnish an accurate indication of the extent or progress of manufacturing throughout Australia, since the larger establishments in many cases tend to absorb smaller enterprises, while on the other hand new factories are constantly springing up, and small plants are as numerous as large ones.

2. Number of Factories in each State, 1924-25 to 1928-29.—The following table gives the number of factories in each State for the years 1924-25 to 1928-29 :—

FACTORIES.—NUMBER IN EACH STATE, 1924-25 TO 1928-29.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia..
1924-25 ..	7,906	7,425	1,890	1,711	1,188	675	20,795
1925-26 ..	8,196	7,461	1,897	1,791	1,170	727	21,242
1926-27 ..	8,222	7,690	1,877	1,807	1,216	767	21,579
1927-28 ..	8,362	8,245	2,118	1,860	1,398	792	22,775
1928-29 ..	8,465	8,197	2,156	1,844	1,469	785	22,916

(a) See general note above.

3. Classification of Factories, Australia, 1924-25 to 1928-29.—The following table shows the number of factories in Australia for each year from 1924-25 to 1928-29 classified in the groups agreed upon by the Conferences of Statisticians in 1902 and 1906. Details in regard to some of the principal industries in these groups will be found in § 9 hereinafter.

FACTORIES.—CLASSIFICATION, AUSTRALIA, 1924-25 TO 1928-29.

Class of Industry.	1924-25. (a)	1925-26. (a)	1926-27. (a)	1927-28. (a)	1928-29. (a)
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	No. 780	No. 761	No. 710	No. 658	No. 627
II. Treating oils and fats, animal, vegetable, etc. ..	98	98	98	95	97
III. Processes in stone, clay, glass, etc. ..	871	900	910	896	877
IV. Working in wood ..	2,507	2,552	2,500	2,429	2,428
V. Metal Works, machinery, etc. ..	2,600	2,656	2,650	2,677	2,680
VI. Connected with food and drink, etc. ..	2,756	2,840	2,869	3,923	3,964
VII. Clothing and textile fabrics, etc. ..	4,616	4,635	4,757	4,813	4,871
VIII. Books, paper, printing, and engraving ..	1,477	1,511	1,533	1,556	1,562
IX. Musical instruments, etc. ..	55	48	55	55	56
X. Arms and explosives ..	13	12	12	12	13
XI. Motor and other road vehicles and accessories ..	2,338	2,499	2,626	2,707	2,794
XII. Ship and boat building and repairing ..	87	89	88	90	90
XIII. Furniture, bedding, and upholstery ..	1,192	1,223	1,273	1,303	1,267
XIV. Drugs, chemicals, and by-products ..	340	333	333	330	320
XV. Surgical and other scientific instruments ..	92	93	99	106	106
XVI. Jewellery, timepieces, and plated ware ..	262	270	269	264	273
XVII. Heat, light, and power ..	448	436	451	469	462
XVIII. Leatherware, n.e.l. ..	121	122	(b) 279	(b) 322	(b) 342
XIX. Other Industries, n.e.l. ..	142	174	67	70	87
Total ..	20,795	21,242	21,579	22,775	22,916

(a) See general note above. (b) Includes Rubber Goods formerly in Class XIX., Other Industries, n.e.l.

CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF EMPLOYEES. 585

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used."

The expansion in the number of factories in Australia has been particularly marked during recent years. More than 500 additional establishments have been added to the total number in each of the past five years. The addition of 1,196 factories during the year 1927-28 is due mainly to the inclusion of 951 bakeries, particulars regarding which industry were incorporated for the first time in the year named. As previously pointed out, however, any increase or decrease in the number of factories from year to year does not necessarily indicate a change in the position of the industry.

4. Classification of Factories, States, 1928-29.—The following table shows the number of factories in each State during 1928-29 classified according to the nature of the industry :—

FACTORIES.—CLASSIFICATION, STATES, 1928-29.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Aust.
	No.	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	167	229	37	80	40	74	627
II. Treating oils and fats animal, vegetable, etc. . .	40	27	11	12	6	1	97
III. Processes in stone, clay, glass, etc. . .	405	251	46	91	62	22	877
IV. Working in wood . . .	926	637	343	152	157	213	2,428
V. Metal works, machinery, etc. . .	997	1,024	199	237	181	42	2,680
VI. Connected with food and drink, etc. . .	1,195	1,237	693	413	287	139	3,964
VII. Clothing and textile fabrics, etc. . .	1,834	2,147	267	313	227	83	4,871
VIII. Books, paper, printing, and engraving . . .	608	576	144	112	101	21	1,562
IX. Musical instruments, etc. . .	27	19	1	6	3	..	56
X. Arms and explosives . . .	3	9	..	1	..	..	18
XI. Motor and other road vehicles and accessories . . .	1,124	981	188	209	196	96	2,794
XII. Ship and boat building and repairing . . .	49	15	7	6	7	6	90
XIII. Furniture, bedding and upholstery . . .	455	466	115	97	89	45	1,267
XIV. Drugs, chemicals, and by-products . . .	156	102	4	24	17	17	320
XV. Surgical and other scientific instruments . . .	31	46	14	6	9	..	106
XVI. Jewellery, timepieces and plated ware . . .	92	119	19	20	15	8	273
XVII. Heat, light, and power . . .	187	131	48	35	52	9	462
XVIII. Rubber goods and leatherware, n.e.l. . .	127	149	13	28	17	8	342
XIX. Other Industries n.e.l. . .	42	32	7	2	3	1	87
Total . . .	8,465	8,197	2,156	1,844	1,469	785	22,916

§ 2. Classification of Factories according to Number of Employees.

1. States, 1928-29.—A more satisfactory method of measuring the importance of the manufacturing industry in Australia may, perhaps, be obtained by grouping the factories according to the average number of employees therein.

The following table shows, for each State, the number of factories classified according to the number of hands employed, and the average number of hands employed therein, during 1928-29 :—

FACTORIES.—CLASSIFICATION ACCORDING TO NUMBER OF EMPLOYEES, 1928-29.

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
NUMBER OF FACTORIES.							
Under 4 ..	2,466	2,585	444	407	507	187	6,596
4 ..	782	823	211	182	125	96	2,219
5 to 10 ..	2,387	2,241	674	614	417	305	6,638
11 to 20 ..	1,221	1,085	357	303	183	112	3,261
21 to 50 ..	963	903	275	225	149	49	2,564
51 to 100 ..	355	300	97	72	67	22	913
Over 100 ..	291	260	98	41	21	14	725
Total ..	8,465	8,197	2,156	1,844	1,469	785	22,916

FACTORIES.—CLASSIFICATION ACCORDING TO NUMBER OF EMPLOYEES,
1928-29—continued.

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
Under 4 ..	4,997	4,907	959	910	1,018	430	13,221
4 ..	3,128	3,292	877	728	500	384	8,909
5 to 10 ..	16,556	15,391	4,687	4,224	2,875	2,091	45,824
11 to 20 ..	17,729	15,840	5,195	4,393	2,714	1,632	47,503
21 to 50 ..	30,631	28,472	8,332	7,051	4,847	1,558	80,891
51 to 100 ..	24,331	20,963	6,792	5,120	4,538	1,492	63,236
Over 100 ..	87,770	67,703	21,432	15,391	5,327	3,984	201,607
Total ..	185,142	156,568	48,274	37,817	21,819	11,571	461,191

AVERAGE NUMBER OF HANDS EMPLOYED.

Under 4 ..	4,997	4,907	959	910	1,018	430	13,221
4 ..	3,128	3,292	877	728	500	384	8,909
5 to 10 ..	16,556	15,391	4,687	4,224	2,875	2,091	45,824
11 to 20 ..	17,729	15,840	5,195	4,393	2,714	1,632	47,503
21 to 50 ..	30,631	28,472	8,332	7,051	4,847	1,558	80,891
51 to 100 ..	24,331	20,963	6,792	5,120	4,538	1,492	63,236
Over 100 ..	87,770	67,703	21,432	15,391	5,327	3,984	201,607
Total ..	185,142	156,568	48,274	37,817	21,819	11,571	461,191

2. Australia, 1924-25 to 1928-29.—A satisfactory feature disclosed by the classification in the following table is the continued growth of the larger factories, the average number employed in establishments with more than 100 hands increasing from 269 to 278 during the past four years:—

FACTORIES.—CLASSIFICATION ACCORDING TO NUMBER OF EMPLOYEES,
AUSTRALIA, 1924-25 TO 1928-29.

Year (a)	Establishments Employing on the Average—							
	20 hands and under.		21 to 100 hands.		101 hands and upwards.		Total.	
	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.
1924-25—								
Number ..	16,672	110,884	3,428	141,773	695	187,292	20,795	439,949
Average per establishment ..	6.65	6.65	41.36	41.36	269.48	269.48	21.16	21.16
Percentage on total ..	80.17	25.20	16.49	32.23	3.34	42.57	100.00	100.00
1925-26—								
Number ..	17,053	111,653	3,465	143,724	724	195,543	21,242	450,920
Average per establishment ..	6.55	6.55	41.48	41.48	270.09	270.09	21.23	21.23
Percentage on total ..	80.28	24.76	16.31	31.87	3.41	43.37	100.00	100.00
1926-27—								
Number ..	17,259	111,545	3,587	151,339	733	204,363	21,579	467,247
Average per establishment ..	6.46	6.46	42.19	42.19	278.80	278.80	21.65	21.65
Percentage on total ..	79.98	23.87	16.62	32.39	3.40	43.74	100.00	100.00
1927-28—								
Number ..	18,502	116,930	3,566	148,901	707	198,365	22,775	464,196
Average per establishment ..	6.32	6.32	41.76	41.76	280.57	280.57	20.38	20.38
Percentage on total ..	81.24	25.19	15.66	32.08	3.10	42.73	100.00	100.00
1928-29—								
Number ..	18,714	115,457	3,477	144,127	725	201,607	22,916	461,191
Average per establishment ..	6.17	6.17	41.45	41.45	278.08	278.08	20.13	20.13
Percentage on total ..	81.66	25.03	15.17	31.25	3.17	43.71	100.00	100.00

(a) See general note on first page of this Chapter.

§ 3. Power used in Factories.

1. States, 1928-29.—The following table shows the number of factories using steam, gas, oil, electricity, or water, and the horse-power of engines or motors during 1928-29 :—

FACTORIES.—HORSE-POWER OF ENGINES USED, 1928-29.

State.	Number of Establishments.			Actual Horse-power of Engines Used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity, or Water.	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Water.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
N.S.W. ..	7,660	805	8,465	376,737	14,531	15,058	236,255	5,869	648,450
Victoria ..	7,295	902	8,197	248,066	10,886	13,330	147,835	26,265	446,382
Queensland ..	1,770	386	2,156	147,788	12,836	9,761	32,391	8	202,784
S. Australia ..	1,622	222	1,844	97,410	6,865	7,504	44,114	..	155,893
W. Australia ..	1,245	224	1,469	55,465	4,637	3,623	22,736	..	86,461
Tasmania ..	712	73	785	7,017	26	921	54,339	77,041	139,344
Australia ..	20,304	2,612	22,916	932,483	49,781	50,197	537,670	109,183	1,679,314

The utilization of mechanical power in factories is greatest in New South Wales where the largest number of industries requiring a considerable amount of power is located. Victoria, on the other hand, has the largest number of establishments, such as those connected with clothing and textile fabrics, wherein much less power is utilized.

The number of establishments in Australia during 1928-29 using steam, gas, oil, electricity, or water was 20,304, or 88.60 per cent. of the total; while 2,612 establishments, representing 11.40 per cent., used no mechanical power. The total actual horse-power in use was 1,679,314, distributed in the following proportions :—Steam, 55.53 per cent.; gas, 2.96 per cent.; oil, 2.99 per cent.; electricity, 32.2 per cent.; and water, 6.50 per cent.

2. Australia, 1924-25 to 1928-29.—The following table shows the horse-power of engines used in connexion with factories in Australia during each of the last five years :—

FACTORIES.—HORSE-POWER OF ENGINES USED, AUSTRALIA, 1924-25 TO 1928-29.

Year.(a)	Number of Establishments.			Actual Horse-power of Engines Used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity, or Water.	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Water.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
1924-25 ..	17,717	3,078	20,795	715,475	59,980	17,232	394,381	73,008	1,260,076
1925-26 ..	18,358	2,884	21,242	753,010	60,645	24,116	425,417	72,014	1,335,202
1926-27 ..	18,916	2,663	21,579	853,265	55,722	32,459	461,789	71,881	1,475,116
1927-28 ..	19,926	2,849	22,775	879,082	52,351	43,133	507,163	74,580	1,556,309
1928-29 ..	20,304	2,612	22,916	932,483	49,781	50,197	537,670	109,183	1,679,314

(a) See general note on first page of this Chapter.

The growth of electrical power has been one of the chief factors in the rapid increase of mechanical power which has taken place in factories during recent years. From 72,250 horse-power in 1913, or roughly one-sixth of the total horse-power of engines used, it has increased to 537,670 horse-power, or one-third of the total installations in 1928-29. Steam power continues to expand with the development of the larger industries, but the major portion of the quantity recorded is used for the generation of electric light and power. During the past four years an average of 104,810 horse-power has been added each year to the plant actually in use.

3. Classes of Industry, States, 1928-29.—The following table gives a classification of the actual horse-power of engines used in factories of different descriptions in each state during 1928-29 :—

FACTORIES.—HORSE-POWER OF ENGINES USED IN EACH CLASS, 1928-29.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	7,672	8,772	1,576	1,979	769	794	21,562
II. Treating oils and fats, animal, vegetable, etc. . .	2,219	1,540	820	515	383	553	6,030
III. Processes in stone, clay, glass, etc. . .	34,529	21,482	4,096	6,478	3,432	3,913	73,935
IV. Working in wood . . .	27,315	17,946	10,499	4,358	9,276	4,571	74,465
V. Metal works, machinery, etc. . .	103,090	30,035	10,701	10,521	5,674	39,417	199,438
VI. Connected with food and drink, etc. . .	56,852	48,205	60,884	14,177	8,873	5,299	194,295
VII. Clothing and textile fabrics, etc. . .	15,963	26,940	2,487	1,908	1,034	1,950	50,372
VIII. Books, paper, printing, and engraving . . .	13,267	12,712	2,634	2,123	1,511	361	32,608
IX. Musical instruments, etc. . .	2,058	707	3	129	3	..	2,900
X. Arms and explosives . . .	673	867	..	4	..	..	1,544
XI. Motor and other road vehicles and accessories . . .	6,062	6,563	991	4,558	783	353	19,315
XII. Ship and boat building and repairing . . .	10,830	1,478	71	105	44	81	12,009
XIII. Furniture, bedding, and upholstery . . .	7,413	5,177	1,756	2,300	1,205	507	18,358
XIV. Drugs, chemicals, and by-products . . .	6,080	5,876	188	5,296	2,126	806	19,872
XV. Surgical and other scientific instruments . . .	113	93	19	20	10	..	255
XVI. Jewellery, timepieces, and plated ware . . .	544	842	68	86	18	16	1,574
XVII. Heat, light, and power . .	342,710	243,738	105,442	101,075	51,173	81,185	925,323
XVIII. Rubber goods and leatherware, n.e.i. . .	10,309	13,086	408	169	95	14	24,081
XIX. Other Industries, n.e.i. . .	251	323	141	2	42	19	778
Total . . .	648,450	446,382	202,784	155,893	86,461	139,344	1,679,314

4. Classes of Industry, Australia, 1924-25 to 1928-29.—The following table shows a similar classification of the actual horse-power of engines used in manufacturing industries in Australia during the years 1924-25 to 1928-29 inclusive :—

FACTORIES.—HORSE-POWER OF ENGINES USED, AUSTRALIA, 1924-25 TO 1928-29.

Class of Industry.	1924-25. (a)	1925-26. (a)	1926-27.	1927-28.	1928-29.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	23,225	23,319	22,168	21,213	21,562
II. Treating oils and fats, animal, vegetable, etc. . .	4,684	4,973	5,507	5,546	6,030
III. Processes in stone, clay, glass, etc. . .	55,132	59,897	66,528	69,403	73,935
IV. Working in wood . . .	72,935	77,233	75,079	75,406	74,465
V. Metal works, machinery, etc. . .	167,801	187,129	195,308	201,496	199,438
VI. Connected with food and drink, etc. . .	180,194	172,519	174,355	186,092	194,295
VII. Clothing and textile fabrics, etc. . .	36,638	40,469	45,758	47,924	50,372
VIII. Books, paper, printing, and engraving . . .	27,700	29,613	29,954	33,348	32,608
IX. Musical instruments, etc. . .	1,192	1,550	2,046	2,429	2,900
X. Arms and explosives . . .	1,339	1,219	1,218	1,150	1,544
XI. Motor and other road vehicles and accessories . . .	13,084	14,887	16,383	17,402	19,315
XII. Ship and boat building and repairing . . .	11,775	11,998	12,513	13,477	12,009
XIII. Furniture, bedding, and upholstery . . .	12,084	14,728	16,542	17,443	18,358
XIV. Drugs, chemicals, and by-products . . .	14,166	15,190	16,712	18,650	19,872
XV. Surgical and other scientific instruments . . .	290	278	259	261	255
XVI. Jewellery, timepieces, and plated ware . . .	1,251	1,339	1,264	1,437	1,574
XVII. Heat, light, and power . . .	646,605	666,676	779,886	825,855	925,323
XVIII. Leatherware, n.e.i. . .	805	561	(b)13,143	(b)17,142	(b)24,081
XIX. Other Industries, n.e.i. . .	9,176	11,624	493	635	778
Total . . .	1,260,076	1,335,202	1,475,116	1,556,309	1,679,314

(a) See general note on first page of this Chapter.

(b) Includes Rubber Goods formerly in Class XIX., Other Industries, n.e.i.

The actual horse-power of engines used increased in all branches of industry except Class IV. Working in Wood, Class V. Metal Works, Machinery, etc., Class VIII. Books, Paper, etc., Class XII. Ship and Boat Building and Repairing, and Class XV. Surgical and other Scientific Instruments. The industries using the greatest amount of power were Class XVII. Heat, light, and power; Class V. Metal works, machinery, etc.; and Class VI. Connected with food and drink. These three classes, which together accounted for 78.55 per cent. of the total power used in 1928-29, increased their horse-power from 974,600 to 1,319,056 during the four years under review, and are mainly responsible for the development of mechanical power in factories since 1924-25.

§ 4. Employment in Factories.

1. Total Number Employed.—Each person employed in and about a factory, in whatever capacity, is now included as a factory employee, consequently every proprietor who works in his own business is counted as an employee, and all "outworkers" (see subsection 5 (ii) hereinafter) are also included. The individuals embraced may be classed under the following heads:—(i) Working proprietors; (ii) managers and overseers; (iii) accountants and clerks; (iv) engine-drivers and firemen; (v) skilled and unskilled workers in the factories, mills, or workshops; (vi) carters and messengers; and (vii) others.

The number of persons employed during the year 1928-29 has been computed in accordance with a resolution of the Conference of Statisticians held in 1928. The new method shows the average number of persons employed over the whole year rather than the average over the period worked. Employment figures for previous years have also been recomputed on this basis for purposes of comparison. The tables relating to Classification of Factories according to the Number of Employees (see §2 *ante*) are, however, on the old basis. In all other tables relating to employment, average salaries and wages paid, output per employee, etc., the factor used is the average obtained in accordance with the abovementioned resolution.

The following table shows, for each year from 1924-25 to 1928-29 inclusive, (a) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State: (b) the percentage of the numbers employed in each State on the total numbers employed in Australia; and (c) the numbers employed per ten thousand of the population in each State and Australia:—

FACTORIES.—EMPLOYMENT, 1924-25 TO 1928-29.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
AVERAGE NUMBER.							
1924-25	161,616	151,588	46,476	37,714	20,670	9,990	428,054
1925-26	169,748	149,135	47,551	39,050	20,666	10,147	436,297
1926-27	179,364	157,598	44,122	41,075	19,403	10,622	452,184
1927-28	178,094	156,348	44,711	39,044	20,420	11,111	449,728
1928-29	180,806	156,568	45,031	36,807	20,804	10,466	450,482

PERCENTAGE ON AUSTRALIAN TOTAL.

	%	%	%	%	%	%	%
1924-25	37.76	35.41	10.86	8.81	4.83	2.33	100.00
1925-26	38.91	34.18	10.90	8.95	4.74	2.32	100.00
1926-27	39.67	34.85	9.76	9.08	4.29	2.35	100.00
1927-28	39.60	34.76	9.95	8.68	4.54	2.47	100.00
1928-29	40.14	34.76	9.99	8.17	4.62	2.32	100.00

PER 10,000 OF POPULATION.

1924-25	703	902	540	686	559	454	715
1925-26	722	872	540	685	544	483	714
1926-27	744	906	490	708	496	483	726
1927-28	727	888	486	673	498	485	711
1928-29	729	880	484	635	495	476	703

(a) See general note on first page of this Chapter.

2. Rates of Increase, 1924-25 to 1928-29.—The following table shows the percentage of increase or decrease on the average number of persons employed for the preceding year in each of the years from 1924-25 to 1928-29.

FACTORY EMPLOYEES.—PERCENTAGE OF INCREASE, 1924-25 TO 1928-29.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	%	%	%	%	%	%	%
1923-24—1924-25..	4.71	-4.40	9.80	4.67	11.35	-6.57	9.25
1924-25—1925-26..	5.03	-1.62	2.31	3.54	-0.02	1.58	1.93
1925-26—1926-27..	5.66	5.67	-7.21	5.19	-6.11	4.68	3.64
1926-27—1927-28..	-7.08	-7.93	1.33	-4.94	5.24	4.60	-5.43
1927-28—1928-29..	1.52	0.14	0.72	-5.73	1.88	-5.81	0.17

NOTE.—The minus sign indicates decrease.

(a) See general note on first page of this Chapter.

3. Employees in Classes of Industry, Australia, 1924-25 to 1928-29.—The following table gives the average numbers of persons employed in factories under each group in Australia during the years 1924-25 to 1928-29 inclusive :—

FACTORY EMPLOYEES.—CLASSES, AUSTRALIA, 1924-25 TO 1928-29.

Class of Industry.	1924-25. (a)	1925-26. (a)	1926-27.	1927-28.	1928-29.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	10,011	10,076	9,990	8,879	7,805
II. Treating oils and fats, animal, vegetable, etc. ..	3,252	3,241	3,138	2,939	2,969
III. Processes in stone, clay, glass, etc. ..	19,792	20,051	20,894	20,720	19,692
IV. Working in wood ..	35,272	34,651	31,985	29,170	25,762
V. Metal works, machinery, etc. ..	88,431	93,643	98,432	95,830	98,145
VI. Connected with food and drink, etc. ..	62,962	63,941	62,818	68,975	67,029
VII. Clothing and textile fabrics, etc. ..	98,104	100,145	107,944	106,358	109,108
VIII. Books, paper, printing, and engraving ..	32,150	32,049	32,771	32,948	33,837
IX. Musical instruments, etc. ..	1,402	1,594	1,831	1,713	1,895
X. Arms and explosives ..	797	842	906	804	914
XI. Motor and other road vehicles and accessories ..	23,579	24,762	27,373	25,496	27,094
XII. Ship and boat building and repairing ..	6,062	5,909	6,095	6,543	6,144
XIII. Furniture, bedding, and upholstery ..	15,273	15,426	16,289	16,223	16,006
XIV. Drugs, chemicals, and by-products ..	7,308	7,496	7,932	7,940	8,251
XV. Surgical and other scientific instruments ..	671	674	703	749	771
XVI. Jewellery, timepieces, and plated ware ..	2,301	2,267	2,138	2,180	2,191
XVII. Heat, light, and power ..	13,364	11,160	11,571	11,722	12,216
XVIII. Leatherware, n.e.l. ..	2,438	2,690	(b)9,523	(b)9,544	(b)9,587
XIX. Other Industries, n.e.l. ..	4,885	5,680	851	935	1,066
Total ..	428,054	436,297	452,184	449,728	450,482

(a) See general note on first page of the Chapter.

(b) Includes Rubber Goods formerly in Class XIX., Other Industries, n.e.l.

Compared with the previous year, the number of employees in 1928-29 increased by 754, an improvement on the previous year when a decline of 2,456 was recorded. Except during the war years, the year 1927-28 is the first in which a decline has been recorded. On the average during each of the last four years, however, employment has been found for 5,607 additional persons in the manufacturing industries. The classes responsible for the bulk of the increase were Class V. Metal Works, Class VII. Clothing and Textile Fabrics, Class XI. Vehicles, etc., and Class XIII. Furniture, Bedding and Upholstery, in several of the principal industries of which classes considerable development has occurred during the period.

4. Employees in Classes of Industry, States, 1928-29.—The following table gives a classification of employees in manufacturing industries in each State during 1928-29 :—

FACTORY EMPLOYEES.—CLASSES, STATES, 1928-29.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	2,710	3,198	648	709	252	288	7,805
II. Treating oils and fats, animal, vegetable, etc.	1,417	880	228	280	120	44	2,969
III. Processes in stone, clay, glass, etc.	9,980	5,576	864	1,540	1,300	432	19,692
IV. Working in wood	8,611	6,601	4,909	1,491	2,811	1,339	25,762
V. Metal works, machinery, etc.	47,358	27,340	7,712	9,282	4,527	1,926	98,145
VI. Connected with food and drink, etc.	22,131	20,934	14,348	4,975	2,672	1,969	67,029
VII. Clothing and textile fabrics, etc.	37,606	53,949	6,889	5,061	3,408	2,195	109,108
VIII. Books, paper, printing and engraving	13,932	11,490	3,659	2,387	1,687	682	33,837
IX. Musical instruments, etc.	1,257	537	15	65	21	--	1,895
X. Arms and explosives	894	517	--	8	--	--	914
XI. Motor and other road vehicles and accessories	9,287	8,163	1,613	5,819	1,528	684	27,094
XII. Ship and boat building and repairing	5,450	396	98	115	49	36	6,144
XIII. Furniture, bedding, and upholstery	6,698	4,792	1,647	1,333	1,111	425	16,006
XIV. Drugs, chemicals, and by-products	3,536	2,791	60	1,143	645	76	8,251
XV. Surgical and other scientific instruments	287	284	92	67	41	--	771
XVI. Jewellery, timepieces, and plated ware	777	1,065	127	130	66	26	2,191
XVII. Heat, light, and power	4,879	3,034	1,514	2,104	402	283	12,216
XVIII. Rubber goods and leatherware, n.e.i.	3,895	4,688	538	295	114	57	9,587
XIX. Other Industries, n.e.i.	601	333	70	8	50	4	1,066
Total	180,806	156,568	45,031	36,807	20,804	10,466	450,482

The largest number employed in any particular class in Australia during 1928-29 was in Class VII., in which there were 109,108 employees, or 24.22 per cent. of the total in all classes. The class affording employment to the smallest number of hands was Class XV., in which there were 771 hands, or 0.17 per cent. of the total. Classes VI., VII., and VIII. include those industries in which female labour is largely employed (See § 5, 5 hereof.)

5. Employees According to Nature of Employment.—(i) *General*. In the following table the average numbers of persons employed in each State during 1928-29 are classified according to the nature of their employment :—

FACTORY EMPLOYEES.—NATURE OF EMPLOYMENT, 1928-29.

State.	Average Number of Persons Employed.						Total.
	Working Pro- priators.	Managers and Overseers.	Account- ants and Clerks.	Engine- drivers and Firemen.	Workers, Skilled & Unskilled, in Factory, Mill or Workshop. (a)	Carters, Messen- gers and Others.	
New South Wales ..	6,686	6,706	10,099	2,869	152,848	1,598	180,806
Victoria ..	7,302	5,826	6,847	1,850	132,544	2,199	156,568
Queensland ..	1,595	1,753	2,583	1,896	33,821	3,383	45,031
South Australia ..	1,431	1,409	2,591	428	30,178	770	36,807
Western Australia ..	1,005	830	1,167	408	16,757	637	20,804
Tasmania ..	482	517	799	204	8,200	264	10,466
Australia ..	18,501	17,041	24,086	7,655	374,348	8,851	450,482

(a) Including Outworkers.

(ii) *Outworkers.* The term "outworker" or "homeworker" has acquired a special meaning in connexion with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees' own homes. Individuals working for themselves are not included. The following table gives particulars of the average number of outworkers connected with factories in each State during each year from 1924-25 to 1928-29 inclusive :—

FACTORIES.—OUTWORKERS(a), 1924-25 TO 1928-29.

Year.(b)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
1924-1925..	461	728	32	62	4	19	1,306
1925-1926..	403	736	23	83	2	24	1,271
1926-1927..	336	592	31	66	7	53	1,085
1927-1928..	333	380	40	51	5	67	876
1928-1929..	288	240	44	41	2	22	637

(a) In all tables relating to number of hands employed in factories, outworkers are included.

(b) See general note on first page of this Chapter.

The Factories Acts in each State contain provisions regulating the employment of outworkers. Records of outwork, specifying the names and remuneration of workers, and stating the places where the work is done, must be kept by factory proprietors. Fuller information regarding the operation of the Factories Acts will be found in Official Year Book No. 16, pp. 540 to 566.

§ 5. Sex Distribution in Factories.

1. *Employment of Females.*—In all the States the employment of female labour in factories is regulated by Acts of Parliament. More extended reference to this matter will be found in Official Year Book No. 16, pp. 540 to 566.

2. *Distribution of Employees according to Sex.*—(i) *General.* In New South Wales the ratio of the number of females employed in factories to the number of males during 1886 was about one to seven; in 1891 one to six; in 1903 it became about one to four; and is now less than one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is nearly one to two. In the remaining States the ratio was roughly one female employed to every five males, while that for Australia as a whole was one to three. The employment of women is, however, mainly confined to a few trades.

Increasing activity in the clothing and textile industries is the principal cause of the growth in female employment. Certain occupations are regarded as specially suitable for women, such as clothing and textile manufacture, preparation of food, book-binding, and wrapping and packing connected with various industries. A considerable number of women clerks and typists are also included in the returns.

(ii) *Average Number of Males and Females Employed, 1924-25 to 1928-29.* The following table shows the average number of male and female employees in factories in each State from 1924-25 to 1928-29 :—

FACTORIES.—MALES AND FEMALES EMPLOYED, 1924-25 TO 1928-29.

State.	1924-25.(a)	1925-26.(a)	1926-27.	1927-28.	1928-29.
MALES.					
New South Wales ..	123,334	128,933	135,418	134,488	135,813
Victoria ..	104,217	101,899	106,245	105,366	104,648
Queensland ..	38,850	40,045	37,119	37,381	37,107
South Australia ..	30,717	32,289	34,076	32,214	30,385
Western Australia ..	17,400	17,392	15,959	16,710	16,993
Tasmania ..	8,190	8,225	8,616	8,730	8,164
Australia ..	322,708	328,783	337,433	334,889	333,110

FEMALES.					
New South Wales ..	38,282	40,815	43,946	43,606	44,993
Victoria ..	47,371	47,236	51,353	50,982	51,920
Queensland ..	7,626	7,506	7,003	7,330	7,924
South Australia ..	6,997	6,761	6,999	6,830	6,422
Western Australia ..	3,270	3,274	3,444	3,710	3,811
Tasmania ..	1,800	1,922	2,006	2,381	2,302
Australia ..	105,346	107,514	114,751	114,839	117,372

(a) See general note on first page of this Chapter.

During the years specified in the above table there has been an increase in the number of male factory employees in Australia of 10,402, or an annual average of 2,080, whilst the number of female employees increased by 12,026, or an annual average of 2,405.

(iii) *Average Number of Males and Females Employed per 10,000 of Population, 1924-25 to 1928-29.* The following table shows the average number of male and female employees per 10,000 of the male and female population respectively in each State from 1924-25 to 1928-29 :—

MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF MALE AND FEMALE POPULATION RESPECTIVELY, 1924-25 TO 1928-29.

State.	1924-25.(a)	1925-26.(a)	1926-27.	1927-28.	1928-29.
MALES.					
New South Wales ..	1,072	1,102	1,128	1,102	1,087
Victoria ..	1,271	1,213	1,250	1,211	1,189
Queensland ..	883	890	790	779	757
South Australia ..	1,138	1,153	1,175	1,074	1,013
Western Australia ..	870	870	798	796	772
Tasmania ..	754	748	783	794	742
Australia ..	1,077	1,074	1,082	1,050	1,028

(a) See general note on first page of this Chapter.

MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF MALE
AND FEMALE POPULATION RESPECTIVELY—*continued.*

State.	1924-25.(a)	1925-26.(a)	1926-27.	1927-28.	1928-29.
FEMALES.					
New South Wales ..	348	361	382	370	375
Victoria ..	571	556	597	586	583
Queensland ..	196	183	167	176	184
South Australia ..	269	250	259	244	229
Western Australia ..	192	192	191	206	201
Tasmania ..	164	175	182	217	209
Australia ..	366	367	384	377	379

(a) See general note on first page of this Chapter.

3. Rate of Variation for each Sex.—The percentages of annual increase or decrease during the years 1924-25 to 1928-29 in the average number of males and females employed in factories are shown below :—

PERCENTAGES OF ANNUAL INCREASE, MALE AND FEMALE FACTORY
EMPLOYEES, 1924-25 TO 1928-29.

State.	1923-24— 1924-25.(a)	1924-25— 1925-26.(a)	1925-26— 1926-27.(a)	1926-27— 1927-28.	1927-28— 1928-29.
MALES.					
New South Wales ..	% 4.71	% 3.73	% 5.03	% -0.69	% 0.99
Victoria ..	-0.64	-2.22	4.27	-0.83	-0.68
Queensland ..	12.15	3.08	-7.36	0.71	-0.79
South Australia ..	5.01	5.12	5.53	-5.46	-5.68
Western Australia ..	12.40	-0.05	-8.25	4.71	1.69
Tasmania ..	-6.83	0.43	4.75	1.32	-6.48
Total ..	3.82	1.88	2.63	-0.75	-0.53

FEMALES.					
New South Wales ..	4.69	6.62	7.67	-0.77	3.18
Victoria ..	0.00	-0.28	8.72	-0.72	1.84
Queensland ..	-0.75	-1.57	-6.70	4.67	8.10
South Australia ..	3.19	-3.37	3.52	-2.41	-5.97
Western Australia ..	6.10	0.12	5.19	7.72	2.72
Tasmania ..	-5.36	6.78	4.37	18.69	-3.32
Total ..	1.90	1.11	6.73	0.77	2.20

NOTE.—The minus sign indicates decrease.

(a) See general note on first page of this Chapter.

MASCULINITY(b) OF FACTORY EMPLOYEES, 1924-25 TO 1928-29.

Year. (a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
1924-25	52.6	37.5	67.2	62.9	68.4	64.0	50.8
1925-26	51.9	36.7	68.4	65.4	68.3	62.1	50.7
1926-27	51.0	34.8	68.3	65.9	64.5	62.2	49.2
1927-28	51.0	34.8	65.1	65.0	63.7	57.1	48.9
1928-29	50.2	33.7	64.8	65.1	63.4	56.0	47.9

(b) Excess of males over females per 100 of both sexes combined.

5. **Employment of Females in Particular Industries.**—A preponderance of women workers occurs in a few trades, of which the more important are comprised in Classes VI., VII., and VIII., viz., in connexion with food, drink, etc., clothing and textile fabrics, and books, paper, printing, etc. The following tables show the average number of females employed in each of these classes in each State during 1928-29 and the percentages of the average number so employed on the total average number of females employed in all classes of factories :—

Class.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus- tralia.
AVERAGE NUMBER.							
VI. Food, drink, etc.	6,854	5,011	1,065	870	479	465	14,744
VII. Clothing and textile fabrics ..	26,761	38,091	5,079	3,654	2,497	1,475	77,557
VIII. Books, paper, printing, etc. ..	4,150	3,212	846	644	413	148	9,413
All other classes	7,228	5,606	934	1,254	422	214	15,658
Total	44,993	51,920	7,924	6,422	3,811	2,302	117,372

[illegible]

The largest proportion of females is engaged in one or other of the three classes of industry indicated, Class VII. being the most important. The classification of the employment of females in the several industries in that class, and the relation of their number to that of the males so employed, are shown in the following table :—

FEMALES EMPLOYED IN EACH INDUSTRY IN CLASS VII. DURING 1928-29.

Industry.	New South Wales.			Victoria.			Other States.		
	Males.	Females.	Femininity. (a)	Males.	Females.	Femininity. (a)	Males.	Females.	Femininity. (a)
Woollen and tweed mills ..	1,060	1,933	29.17	2,949	3,612	10.11	713	1,138	22.96
Knitting factories ..	1,060	3,432	52.80	1,336	5,397	60.32	41	817	77.09
Cotton mills ..	176	270	21.03	144	338	40.25	16	..	..
Boots and shoes ..	2,850	2,349	- 9.64	6,135	5,372	- 6.63	1,224	867	-17.07
Boot repairing including bespoke work ..	1,108	22	-96.11	557	10	-96.47	418	21	-90.43
Clothing (tailoring and slop)	2,391	8,908	57.68	1,947	6,651	54.71	1,597	5,139	52.58
Clothing (waterproof and oilskin)	30	155	67.57	65	216	53.74	..	..	..
Dressmaking and millinery ..	133	3,154	91.91	532	8,327	87.99	44	2,879	96.37
Dyeworks and cleaning	302	238	-11.85	186	171	- 4.20	167	201	9.24
Furriers ..	182	227	16.71	213	293	15.81	59	108	29.34
Hats and caps ..	618	1,250	33.83	547	1,158	35.83	58	113	32.16
Shirts, ties, and scarves	402	4,413	83.30	607	6,059	81.79	151	2,173	87.01
Rope and cordage ..	220	98	-38.33	439	316	-16.29	102	4	-92.45
Tents and tarpaulins	151	134	- 5.97	129	101	-12.17	127	105	- 9.48
Bags and sacks ..	182	178	- 1.11	72	70	- 1.41	131	140	3.32
Total, Class VII. ..	10,845	26,761	42.95	15,858	38,091	41.21	4,848	12,705	44.76

NOTE.—The minus sign denotes excess of males over females.

(a) Excess of females over males per 100 of both sexes combined.

§ 6. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of Australia is regulated by Acts of Parliament, as is the case with the employment of female labour. Reference to the legislation regarding the employment of child labour in factories will be found in Official Year Book No. 16, pp. 540 to 566. The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education, and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed, 1924-25 to 1928-29.**—In the statistical compilations of the various States the term "child" may be taken to denote any person

under sixteen years of age. The following table shows the average number of children of each sex employed in manufacturing industries in each State during the years 1924-25 to 1928-29 :—

CHILDREN EMPLOYED IN FACTORIES, 1924-25 TO 1928-29.

State.	1924-25.(a)	1925-26.(a)	1926-27.	1927-28.	1928-29.
MALES.					
New South Wales ..	3,968	4,527	4,594	4,016	3,983
Victoria ..	4,027	3,980	4,567	4,231	4,209
Queensland ..	1,507	1,566	1,281	1,272	1,254
South Australia ..	1,080	1,095	1,215	1,073	883
Western Australia ..	552	682	614	677	647
Tasmania ..	238	214	311	343	290
Australia ..	11,372	12,064	12,582	11,612	11,266

FEMALES.					
New South Wales ..	4,256	4,688	5,001	4,747	5,085
Victoria ..	3,223	3,489	4,041	3,992	4,298
Queensland ..	979	1,003	927	850	921
South Australia ..	839	783	856	763	679
Western Australia ..	254	248	242	297	276
Tasmania ..	190	191	254	304	265
Australia ..	9,741	10,402	11,321	10,953	11,524

TOTAL.					
New South Wales ..	8,224	9,215	9,595	8,763	9,068
Victoria ..	7,250	7,469	8,608	8,223	8,507
Queensland ..	2,486	2,569	2,208	2,122	2,175
South Australia ..	1,919	1,878	2,071	1,836	1,562
Western Australia ..	806	930	856	974	923
Tasmania ..	428	405	565	647	555
Australia ..	21,113	22,466	23,903	22,565	22,790

(a) See general note on first page of this Chapter.

3. **Percentage of Children on Total Number of Employees.**—In the foregoing table a general increase in the number of children employed in factories is recorded, although the total shown for the last two years is below that for 1926-27. This increase is greater among the females and amounted to 1,783, while a decrease of 106 is shown in respect of males. Examined in conjunction with the total number of persons employed, the percentage of children has varied little since 1924-25.

PERCENTAGE OF CHILDREN ON TOTAL NUMBER OF FACTORY EMPLOYEES,
1924-25 TO 1928-29.

State.	1924-25.(a)	1925-26.(a)	1926-27.	1927-28.	1928-29.
	%	%	%	%	%
New South Wales	5.09	5.43	5.35	4.92	5.02
Victoria	4.78	5.01	5.46	5.26	5.43
Queensland	5.35	5.40	5.00	4.75	4.81
South Australia	5.09	4.81	5.04	4.70	4.24
Western Australia	3.90	4.50	4.41	4.77	4.44
Tasmania	4.28	3.99	5.32	5.82	5.30
Australia	4.93	5.15	5.29	5.02	5.06

(a) See general note on first page of this Chapter.

4. Industries Employing Child Labour.—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the next table, which shows the average number of children of each sex employed during 1928-29 in the several industries indicated.

CHILDREN EMPLOYED.—VARIOUS INDUSTRIES, 1928-29.

Class.	Industry.	N.S.W.		Victoria.		Q'land.		S. Aust.		W. Aust.		Tas.		Australia.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
II.	Soap and candles ..	40	28	23	20	7	1	10	10	4	..	1	1	85	60
III.	Bricks, tiles, pottery, and earthenware ..	159	4	47	8	20	..	15	..	21	..	4	..	266	12
IV.	Joinery, boxes, cases, etc. ..	82	2	72	1	41	2	19	..	20	..	5	..	239	5
V.	Saw mills ..	22	3	7	..	73	1	8	..	37	..	11	..	158	4
"	Agricultural Imple- ments ..	23	..	65	4	3	..	51	2	3	..	..	..	145	6
"	Engineering, ironworks, and foundries ..	300	5	356	18	66	..	68	6	40	2	2	..	832	31
"	Galvanized ironwork- ing and tinsmithing ..	166	72	196	44	28	1	42	1	14	..	1	..	447	118
"	Railway carriage, rail- way and tramway workshops ..	49	..	83	..	6	..	42	..	10	..	2	..	192	..
"	Wire working ..	85	2	31	2	6	2	8	..	12	..	..	..	142	6
"	Electric apparatus ..	114	12	106	20	1	..	9	..	5	..	..	..	235	32
VI.	Meat and fish preserving ..	..	..	11	..	64	2	..	..	..	..	..	..	75	2
"	Biscuits ..	155	200	139	98	..	..	11	21	48	43	..	..	353	362
"	Confectionery ..	92	289	59	71	25	66	10	43	1	8	53	67	240	544
"	Jams, pickles, sauces, etc. ..	18	9	23	14	14	14	7	22	1	..	9	..	72	59
"	Condiments, coffee, spices, etc. ..	29	81	25	26	..	..	41	13	11	1	..	1	106	122
"	Tobacco, cigars, etc. ..	49	155	41	17	..	..	..	..	1	15	..	..	91	187
VII.	Woolen and tweed mills ..	155	229	321	451	4	32	13	15	7	5	34	88	534	820
"	Knitting factories ..	70	508	110	624	..	6	..	14	2	13	1	80	183	1,193
"	Boots and shoes ..	196	306	380	480	37	63	26	32	24	12	10	3	673	896
"	Clothing (tailoring and slop) ..	70	829	76	366	38	242	24	116	9	41	6	21	223	1,615
"	Dressmaking and mil- linery ..	7	397	23	786	1	84	..	137	1	54	..	14	32	1,472
"	Shirts, ties, scarves, etc. ..	20	656	26	489	8	193	2	80	1	37	..	12	57	1,467
"	Hats and caps ..	43	157	21	55	2	10	1	..	..	..	..	..	67	222
"	Rope and cordage ..	16	8	63	21	10	..	3	..	..	..	..	..	92	29
VIII.	Printing and binding ..	371	216	394	153	211	49	58	35	69	18	12	9	1,115	480
"	Paper making, paper boxes, etc. ..	98	269	19	69	7	15	15	33	2	6	..	..	141	392
XI.	Motor Vehicles and Accessories ..	252	10	258	2	47	3	125	13	59	1	21	..	762	29
XIII.	Billiard tables, cabinet making and furniture ..	117	12	146	3	54	7	39	..	48	..	24	1	428	23
"	Bedding, flock, and upholstery ..	31	24	24	14	7	2	5	3	2	1	4	..	73	44
XIV.	Chemicals, drugs, and medicines ..	61	90	19	39	..	14	2	26	4	..	..	2	86	171
XVIII.	Leather belting, etc. ..	60	65	34	46	10	17	5	23	2	4	..	..	111	155
"	Rubber goods ..	58	32	65	59	15	21	4	..	3	..	6	1	151	113

5. **Apprenticeship.**—In all the States Acts are in force for the regulation of the age at which children may be employed in gainful occupations. Legislative provision is also made for the regulation of apprenticeship under the various State Factories Acts or Arbitration Acts. These Acts, while laying down general principles, leave to the wages tribunals the actual determination of the conditions under which apprentices may be employed.

§ 7. Salaries and Wages Paid and Value of Production.

[NOTE.]—In all tables relating to Salaries and Wages paid in Factories the amounts given are exclusive of all sums drawn by working proprietors.

1. **General.**—The importance of the manufacturing industries of Australia is indicated by the fact that the total value of the output for 1928–29 was £420,445,288, of which amount the sum of £238,938,566 represents the value of the raw materials used, and £13,883,406 the value of the fuel and light used. The difference between the sum of the two latter amounts and the value of the output, viz., £167,623,316, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories during 1928–29 was £90,986,908. This figure shows a decline of £378,411 as compared with the total for the previous year and is the first so recorded since 1915.

2. **Salaries and Wages Paid.**—(i) *Total Amount, 1928–29.* The total amount of salaries and wages paid during the year 1928–29 in various classes of factories in Australia is shown in the following table :—

SALARIES AND WAGES PAID IN FACTORIES, 1928–29.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	648,959	750,274	115,904	137,029	55,926	45,993	1,754,085
II. Treating oils and fats, animal, vegetable, etc.	304,386	185,377	52,627	59,906	33,049	9,212	644,557
III. Processes in stone, clay, glass, etc.	2,480,461	1,300,585	185,138	351,411	292,031	85,874	4,695,500
IV. Working in wood	1,962,287	1,424,998	962,937	314,648	649,743	220,773	5,535,386
V. Metal works, machinery, etc.	11,717,156	6,103,702	1,774,176	2,241,634	1,068,239	473,504	23,378,411
VI. Connected with food and drink, etc.	4,711,656	4,450,595	3,314,175	1,026,892	616,684	368,625	14,488,627
VII. Clothing and textile fabrics, etc.	5,260,059	7,472,000	791,432	625,417	417,730	262,857	14,829,504
VIII. Books, paper, printing, and engraving	3,048,194	2,376,284	771,392	502,544	389,305	161,493	7,249,212
IX. Musical instruments, etc.	306,879	113,032	2,815	12,087	4,876	..	439,689
X. Arms and explosives	108,229	115,211	..	208	..	..	223,648
XI. Motor and other road vehicles and accessories	1,802,520	1,653,240	293,791	1,189,369	314,070	99,752	5,352,742
XII. Ship and boat building and repairing	1,525,011	95,249	20,971	30,129	11,555	5,309	1,688,224
XIII. Furniture, bedding, and upholstery	1,333,106	809,177	309,000	224,149	209,094	62,094	2,946,620
XIV. Drugs, chemicals, and by-products	815,433	608,074	11,180	254,589	154,300	14,442	1,858,018
XV. Surgical and other scientific instruments	62,779	54,481	14,457	12,421	6,984	..	151,122
XVI. Jewellery, timepieces, and plated ware	153,066	187,266	22,848	22,809	12,961	3,810	402,760
XVII. Heat, light & power	1,361,323	768,514	381,840	565,447	112,801	72,880	3,262,865
XVIII. Rubber goods and leatherware, n.e.i.	839,308	949,842	64,847	38,167	16,357	7,739	1,916,260
XIX. Other industries, n.e.i.	103,875	48,857	8,094	957	7,385	570	169,738
Total	38,544,687	29,466,767	9,097,624	7,609,813	4,373,090	1,894,927	90,986,908

The maximum amount of salaries and wages paid in any particular class during 1928-29 was in Class V., the amount being £23,378,411, or 25.69 per cent. on the total amount; the minimum amount was in Class XV., £151,122, or 0.17 per cent. on the total. The State in which the largest amount was paid was New South Wales.

(ii) *Totals and Averages, 1924-25 to 1928-29.* The following statement shows the total amount of salaries and wages paid, and the average amount paid per employee in each State, during each of the years 1924-25 to 1928-29. It should be noted that the average wage paid is not comparable with that shown in similar tables in previous issues of the Official Year Book. This is due to the change in method of computing the average number of hands employed as explained heretofore. The figures are exclusive of working proprietors and of the amounts drawn from the business by them :—

SALARIES AND WAGES PAID IN FACTORIES.—TOTAL AND AVERAGE PER ANNUM PER EMPLOYEE, 1924-25 TO 1928-29.

Year. (a)	Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
		£	£	£	£	£	£	£
1924-25	Total amount paid ..	31,520,849	27,444,141	9,228,454	7,150,658	4,127,839	1,888,080	81,360,021
	Average per employee	203.29	189.99	204.16	196.83	206.85	197.44	198.15
1925-26	Total amount paid ..	33,566,546	27,657,753	9,544,115	7,787,912	6,288,036	1,880,321	86,724,683
	Average per employee	206.20	194.69	206.41	207.02	210.88	194.38	207.35
1926-27	Total amount paid ..	37,092,196	29,889,557	9,298,370	8,390,603	3,922,923	1,981,517	90,575,166
	Average per employee	215.04	198.67	216.99	211.84	210.83	196.17	208.65
1927-28	Total amount paid ..	37,818,141	30,030,352	9,140,223	8,164,238	4,210,675	2,001,690	91,365,319
	Average per employee	220.75	201.83	212.33	217.34	216.60	189.30	212.12
1928-29	Total amount paid ..	38,544,687	29,466,767	9,097,624	7,609,813	4,373,090	1,894,927	90,986,908
	Average per employee	221.37	197.41	209.45	215.11	220.87	189.80	210.63

(a) See general note on first page of this Chapter.

(b) Average computed on estimated salaries and wages for twelve months ended 30th June, 1926.

In comparing the figures in the preceding table, regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others. In Victoria, for instance, there is a large number of hands employed in Class VII., comprising a heavy percentage of women and children. The highest average wage per employee in 1928-29 was paid in New South Wales, where the more highly skilled industries are largely located.

In consequence of the rapid rise in the cost of living, on which changes in rates of wage are chiefly based, the salaries and wages paid in factories have advanced considerably during recent years. During the past four years the average was increased by £12.48 or 11.8 per cent., while the additional outlay for wage increases amounted in the aggregate to more than £5,379,000.

(iii) *Earnings of Males and Females, 1928-29.* The following table shows the approximate amount paid in salaries and wages to males and females in each class of industry in each State during the year 1928-29 :—

SALARIES AND WAGES.—MALE AND FEMALE FACTORY EMPLOYEES, 1928-29.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
MALES.							
	£	£	£	£	£	£	£
I. Treating raw material product of agricultural and pastoral pursuits, etc. . .	637,291	744,639	114,381	136,105	54,588	45,450	1,732,454
II. Treating oils and fats, animal, vegetable, etc. . .	259,968	165,773	49,218	53,738	32,764	8,388	569,849
III. Processes in stone, clay, glass, etc. . .	2,453,816	1,281,992	183,489	348,975	287,582	85,256	4,641,110
IV. Working in wood . .	1,935,821	1,411,967	949,911	308,032	648,011	216,788	5,470,530
V. Metal works, machinery, etc. . .	11,530,202	5,987,192	1,750,248	2,215,643	1,060,684	468,709	23,012,678

SALARIES AND WAGES.—MALE AND FEMALE FACTORY EMPLOYEES,
1928-29—continued.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
MALES—continued.							
	£	£	£	£	£	£	£
VI. Connected with food and drink, etc. . .	3,977,208	3,875,876	3,207,894	946,401	567,624	325,460	12,900,463
VII. Clothing and textile fabrics, etc. . .	2,272,398	3,282,809	357,881	254,891	158,734	125,008	6,452,321
VIII. Books, paper, printing, and engraving	2,594,237	1,997,824	678,737	437,494	340,961	145,764	6,195,017
IX. Musical instruments, etc. . .	268,992	108,301	2,662	11,783	4,876	..	396,614
X. Arms and explosives	106,787	90,648	..	208	..	..	197,643
XI. Motor and other road vehicles and accessories . .	1,753,533	1,629,169	280,550	1,146,082	302,694	95,307	5,207,335
XII. Ship and boat building and repairing	1,516,162	94,716	20,971	30,129	11,555	5,309	1,678,842
XIII. Furniture, bedding, and upholstery . .	1,210,028	735,381	293,745	210,411	200,222	59,466	2,709,253
XIV. Drugs, chemicals, and by-products	694,708	514,498	5,124	242,148	150,322	13,588	1,620,388
XV. Surgical and other scientific instruments . .	58,114	50,688	12,388	11,113	6,508	..	138,811
XVI. Jewellery, timepieces, and plated ware	142,654	174,820	21,449	22,303	12,392	3,790	377,411
XVII. Heat, light, & power	1,346,922	711,789	373,267	548,412	112,261	71,811	3,164,462
XVIII. Rubber Goods and Leatherware, n.e.l.	669,844	793,833	41,586	31,155	14,027	7,156	1,557,601
XIX. Other industries, n.e.l.	80,290	32,679	7,544	905	4,939	570	126,927
Total ..	33,503,975	23,684,594	8,351,045	6,955,931	3,970,744	1,678,420	78,149,709

FEMALES.

I. Treating raw material product of agricultural pursuits, etc. . .	11,668	5,635	1,523	924	1,338	543	21,631
II. Treating oils and fats, animal, vegetable, etc. . .	44,418	19,604	3,409	6,168	285	824	74,708
III. Processes in stone, clay, glass, etc. . .	26,645	18,593	1,649	2,436	4,449	618	54,390
IV. Working in wood . .	26,466	13,031	13,026	6,616	1,732	3,985	64,856
V. Metal works, machinery, etc. . .	186,954	116,510	23,928	25,991	7,555	4,795	365,733
VI. Connected with food and drink, etc. . .	734,448	574,719	106,281	80,491	49,060	43,165	1,588,164
VII. Clothing and textile fabrics, etc. . .	2,987,661	4,189,200	433,551	370,526	258,996	137,249	8,377,183
VIII. Books, paper, printing, and engraving	453,957	378,460	92,655	65,050	48,344	15,729	1,054,195
IX. Musical instruments, etc. . .	37,887	4,781	153	304	..	..	43,075
X. Arms and explosives	1,442	24,563	..	..	..	..	26,005
XI. Motor and other road vehicles and accessories . .	48,987	24,071	13,241	43,287	11,376	4,445	145,407
XII. Ship and boat building and repairing	8,849	533	..	..	..	..	9,382
XIII. Furniture, bedding, and upholstery . .	123,078	73,796	15,255	13,738	8,872	2,628	237,367
XIV. Drugs, chemicals, and by-products	120,725	93,576	6,056	12,441	3,973	854	237,630
XV. Surgical and other scientific instruments . .	4,665	3,793	2,069	1,303	476	..	12,311
XVI. Jewellery, timepieces, and plated ware	10,412	12,446	1,399	503	569	20	25,349
XVII. Heat, light, & power	14,401	56,725	8,573	17,035	540	1,069	98,343
XVIII. Rubber Goods and Leatherware, n.e.l.	169,464	156,009	23,261	7,012	2,330	583	358,659
XIX. Other industries, n.e.l.	23,585	16,178	550	52	2,446	..	42,811
Total ..	5,035,712	5,782,173	746,579	653,882	402,346	216,507	12,837,199

(iv) *Total and Average Earnings of Males and Females, 1924-25 to 1928-29.*
 Similar information for the last five years is given in the table hereunder :—

**SALARIES AND WAGES.—MALE AND FEMALE FACTORY EMPLOYEES,
 1924-25 TO 1928-29.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
MALES.							
1924-25. a Amount paid .. £	27,670,943	22,515,561	8,508,263	6,504,470	3,817,930	1,726,633	70,743,800
Per cent. on total ..	78.78	82.04	92.20	90.96	92.49	91.45	86.95
Average per employee £	236.19	230.37	226.14	221.39	227.65	222.01	230.86
1925-26. a Amount paid .. £	29,370,062	22,544,903	8,797,552	7,139,556	5,796,981	1,703,209	75,557,263
Per cent. on total ..	87.50	81.51	92.18	91.67	92.19	90.85	86.89
Average per employee £	239.97	236.17	226.89	231.02	232.40	220.10	241.59
1926-27. Amount paid .. £	32,319,649	24,199,245	8,529,729	7,700,633	5,560,698	1,794,371	78,104,325
Per cent. on total ..	87.13	80.96	91.73	91.78	90.77	90.56	86.23
Average per employee £	250.64	242.59	237.66	235.80	234.21	221.42	243.65
1927-28. Amount paid .. £	32,929,659	24,268,920	8,388,158	7,471,581	5,814,908	1,790,152	78,663,378
Per cent. on total ..	87.07	80.81	91.77	91.52	90.60	89.43	86.10
Average per employee £	257.11	246.31	234.24	242.65	241.80	218.07	248.00
1928-29. Amount paid .. £	33,508,975	23,684,594	8,351,045	6,955,931	3,970,744	1,678,420	78,149,709
Per cent. on total ..	86.94	80.38	91.79	91.41	90.80	88.57	85.89
Average per employee £	258.68	241.51	234.71	239.74	247.57	217.89	247.35

FEMALES.

1924-25. a Amount paid .. £	3,849,906	4,928,580	720,191	646,188	309,909	161,447	10,616,221
Per cent. on total ..	12.22	17.96	7.80	9.04	7.51	8.55	13.05
Average per employee £	101.59	105.49	95.05	92.98	95.86	90.40	101.92
1925-26. a Amount paid .. £	4,196,484	5,112,850	746,563	648,356	491,055	172,112	11,367,420
Per cent. on total ..	12.50	18.49	7.82	8.33	7.81	9.15	13.11
Average per employee £	103.89	109.72	100.01	96.54	101.04	90.02	106.91
1926-27. Amount paid .. £	4,772,547	5,690,312	768,641	689,970	362,225	187,146	12,470,841
Per cent. on total ..	12.87	19.04	8.27	8.22	9.23	9.44	13.77
Average per employee £	109.61	112.25	110.42	99.25	106.41	93.71	109.83
1927-28. Amount paid .. £	4,888,482	5,761,432	752,065	692,657	395,767	211,538	12,701,941
Per cent. on total ..	12.93	19.19	8.23	8.48	9.40	10.57	13.90
Average per employee £	113.06	114.64	103.92	102.27	108.04	89.45	111.88
1928-29. Amount paid .. £	5,035,712	5,782,173	746,579	653,882	402,346	216,507	12,837,199
Per cent. on total ..	13.06	19.62	8.21	8.59	9.20	11.43	14.11
Average per employee £	112.96	112.94	95.05	102.78	107.01	94.92	110.63

(a) See general note on first page of this Chapter.

(b) Averages computed on estimated salaries and wages for twelve months ended 30th June, 1926.

(v) *Managers, Overseers, and Other Employees.* A further analysis of salaries and wages paid is given in the following table, the amounts paid to managers, overseers, etc., being differentiated from those paid to other employees. As previously mentioned, amounts drawn by working proprietors are excluded in all cases.

**SALARIES AND WAGES.—MANAGERS, OVERSEERS, AND OTHER FACTORY
 EMPLOYEES, AUSTRALIA, 1928-29.**

Class of Industry.	Salaries and Wages Paid to—						
	Managers, Overseers, Accountants, and Clerks.		All other Employees.		All Employees.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . . .	£ 233,810	£ 13,715	£ 1,498,644	£ 7,916	£ 1,732,454	£ 21,631	£ 1,754,085
II. Treating oils and fats, animal, vegetable, etc. . . .	135,378	26,791	434,471	47,917	569,849	74,708	644,557
III. Processes in stone, clay, glass, etc. . . .	547,684	32,954	4,093,426	21,436	4,641,110	54,390	4,695,500
IV. Working in wood . . .	695,971	55,637	4,774,559	9,219	5,470,530	64,856	5,535,386
V. Metal works, machinery, etc. . . .	2,543,107	182,610	20,469,571	183,123	23,012,678	365,733	23,378,411
VI. Connected with food and drink, etc. . . .	2,361,233	308,834	10,539,230	1,279,330	12,900,463	1,588,164	14,488,627
VII. Clothing and textile fabrics, etc. . . .	1,170,834	468,592	5,281,487	7,908,591	6,452,321	8,377,183	14,829,504
VIII. Books, paper, printing and engraving . . .	1,063,577	227,450	5,131,440	826,745	6,195,017	1,054,195	7,249,212
IX. Musical instruments, etc. . . .	53,771	17,398	342,843	25,677	396,614	43,075	439,689
X. Arms and explosives . . .	30,354	2,346	167,289	23,659	197,643	26,005	223,648

SALARIES AND WAGES.—MANAGERS, OVERSEERS, AND OTHER
FACTORY EMPLOYEES, AUSTRALIA, 1928-29—*continued.*

Class of Industry.	Salaries and Wages Paid to—						
	Managers, Overseers, Accountants, and Clerks.		All Other Employees.		All Employees.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
	£	£	£	£	£	£	£
XI. Motor and other road vehicles and accessories ..	694,286	102,114	4,513,049	43,293	5,207,335	145,407	5,352,742
XII. Ship and boat building and repairing ..	208,303	6,933	1,470,539	2,449	1,678,842	9,382	1,688,224
XIII. Furniture, bedding, and upholstery ..	259,225	49,047	2,450,028	188,320	2,709,253	237,367	2,946,620
XIV. Drugs, chemicals, and by-products ..	355,243	58,289	1,265,145	179,341	1,620,388	237,630	1,858,018
XV. Surgical and other scientific instruments ..	24,057	7,138	114,754	5,173	138,811	12,311	151,122
XVI. Jewellery, timepieces, and plated ware ..	36,998	9,952	340,413	15,397	377,411	25,349	402,760
XVII. Heat, light, and power	602,926	33,439	2,561,536	64,854	3,164,462	98,343	3,262,805
XVIII. Rubber Goods and Leatherware, n.e.i.	263,268	39,520	1,294,333	319,139	1,557,601	358,659	1,916,260
XIX. Other Industries, n.e.i.	25,048	3,320	101,879	39,491	126,927	42,811	169,738
Total ..	11,305,073	1,646,129	66,844,636	11,191,070	78,149,709	12,837,199	90,986,908
Average paid per employee	375.65	149.21	233.85	106.58	247.35	110.63	210.63

3. Value of Fuel and Light Used.—(i) *Total Amount, 1928-29.* The expenditure in factories on fuel and light is of considerable importance; in 1928-29 it amounted to £13,883,406, a decline of £90,571 when compared with the previous year. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £3,518,192; Class XVII., Heat, Light, Power, etc., £3,417,958, of which amount £2,763,611 was expended on generating electric light and power; Class VI., Connected with Food, Drink, etc., £2,582,351; and Class III., Stone, Clay, Glass, etc., £1,722,656. The following table shows the value of fuel and light used in the different classes of industry during 1928-29:—

VALUE OF FUEL AND LIGHT USED IN FACTORIES, 1928-29.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	123,820	110,671	16,728	20,843	6,257	3,963	282,282
II. Treating oils and fats, animal, vegetable, etc. ..	55,484	56,591	7,280	8,655	10,010	1,124	139,144
III. Processes in stone, clay, glass, etc. ..	853,970	511,910	73,192	134,140	92,928	56,516	1,722,656
IV. Working in wood ..	88,105	58,027	35,359	16,491	19,896	17,892	235,770
V. Metal works, machinery, etc. ..	2,192,438	411,972	81,868	440,518	66,422	315,974	3,518,192
VI. Connected with food and drink, etc. ..	878,246	787,173	526,001	211,025	95,724	84,182	2,582,351
VII. Clothing and textile fabrics, etc. ..	198,904	349,069	21,222	23,271	12,838	34,269	639,573
VIII. Books, paper, printing, and engraving ..	146,467	153,618	33,758	16,987	13,610	5,177	369,617
IX. Musical instruments, etc. ..	19,620	4,669	26	249	88	..	24,652
X. Arms and explosives ..	4,478	20,469	..	14	..	..	24,961
XI. Motor and other road vehicles and accessories ..	76,966	70,330	12,313	48,298	11,020	5,756	224,683
XII. Ship and boat building and repairing ..	73,134	5,884	257	938	67	127	80,407
XIII. Furniture, bedding and upholstery ..	42,216	31,307	10,329	9,386	5,254	2,164	100,656
XIV. Drugs, chemicals, and by-products ..	96,838	79,578	1,842	36,099	24,374	1,187	239,918
XV. Surgical and other scientific instruments	2,145	1,775	627	526	375	..	5,448
XVI. Jewellery, timepieces, and plated ware ..	5,940	8,799	771	1,532	533	119	17,694
XVII. Heat, light, and power	1,812,536	833,687	181,119	306,982	262,590	21,044	3,417,958
XVIII. Rubber Goods and Leatherware, n.e.i.	98,783	144,090	3,367	2,756	1,534	1,147	251,677
XIX. Other industries, n.e.i.	3,124	1,529	568	19	511	16	5,767
Total ..	6,773,214	3,641,148	1,006,627	1,287,729	624,031	550,657	13,883,406

(ii) *Total Amount, 1924-25 to 1928-29.* The following table gives the sums expended on fuel and light during the past five years :—

VALUE OF FUEL AND LIGHT USED IN FACTORIES, 1924-25 TO 1928-29.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
1924-25	5,883,494	2,064,635	782,384	1,154,902	392,753	535,082	11,713,250
1925-26	6,256,725	3,156,382	1,134,530	1,332,914	701,008	501,667	13,083,226
1926-27	6,919,014	3,392,448	990,618	1,884,937	549,796	487,234	13,724,047
1927-28	6,791,285	3,712,886	1,032,303	1,866,853	566,965	483,685	13,973,977
1928-29	6,773,214	3,641,148	1,006,627	1,287,729	624,031	550,657	13,883,406

(a) See general note on first page of this Chapter.

4. *Value of Materials Used.*—(i) *Total Amount, 1928-29.* The value of materials used (which includes the value of containers, packing, etc., the cost of tools replaced and repairs to plant) in factories in Australia during 1928-29 was £238,938,566, which represents 56.83 per cent. of the total value of the final output. (See next sub-section.) The following table shows the value of the materials used in various classes of industry in each State :—

VALUE OF MATERIALS USED IN FACTORIES, 1928-29.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	4,549,017	4,049,288	1,713,295	811,474	289,280	49,091	11,461,445
II. Treating oils and fats, animal, vegetable, etc. . .	1,714,653	977,264	182,869	224,709	184,555	26,336	3,310,386
III. Processes in stone, clay, glass, etc. . .	2,214,116	1,063,510	176,093	262,362	209,346	78,470	4,003,897
IV. Working in wood . .	4,990,964	1,806,015	1,779,132	1,018,638	1,020,888	268,654	10,884,291
V. Metal works, machinery, etc. . .	27,131,306	7,164,461	1,577,880	5,982,520	914,333	1,350,066	44,120,566
VI. Connected with food and drink, etc. . .	37,824,897	28,825,986	21,484,225	6,893,197	3,379,576	1,627,748	100,035,629
VII. Clothing and textile fabrics, etc. . .	9,616,239	15,000,084	1,424,762	1,074,435	801,308	579,483	28,496,311
VIII. Books, paper, printing, and engraving . .	3,789,497	2,892,064	572,191	504,810	321,912	97,810	8,178,284
IX. Musical instruments, etc. . .	443,926	158,586	3,128	13,592	917	..	620,149
X. Arms and explosives .	18,605	267,103	..	1,130	..	..	286,838
XI. Motor and other road vehicles and accessories . .	1,512,891	1,074,737	177,689	1,842,260	210,838	57,240	4,375,655
XII. Ship and boat building and repairing. . .	935,525	41,731	12,956	10,500	6,465	1,907	1,009,084
XIII. Furniture, bedding, upholstery . .	2,411,851	1,403,200	383,220	360,754	270,547	54,315	4,883,977
XIV. Drugs, chemicals, and by-products . .	2,840,928	2,078,590	22,109	894,873	964,587	98,808	6,899,895
XV. Surgical and other scientific instruments . .	47,298	46,248	14,151	9,985	4,782	..	122,464
XVI. Jewellery, timepieces, and plated ware . .	148,740	231,448	10,974	21,227	10,892	533	423,814
XVII. Heat, light, and power . .	2,559,205	1,721,339	185,041	315,479	90,325	66,655	4,938,044
XVIII. Rubber goods and leatherware, n.e.l. .	1,927,845	2,344,495	83,010	79,022	26,939	11,193	4,472,504
XIX. Other industries, n.e.l. .	220,417	84,797	79,709	295	29,359	756	415,338
Total ..	104,897,920	71,231,036	29,882,434	19,821,262	8,736,849	4,369,065	238,938,566

The largest value of materials used was in Class VI., "Connected with Food and Drink, etc." the total being £100,035,629. The next in order of importance was Class V., "Metal Works, Machinery, etc.", in which raw materials valued at £44,120,566 were used. The minimum value appears in Class XV., "Surgical and other Scientific Instruments," the total being only £122,464.

(ii) *Total Amount, 1924-25 to 1928-29.* The following table presents particulars of the values of raw materials used in factories during the past five years:—

VALUE OF RAW MATERIALS USED IN FACTORIES, 1924-25 TO 1928-29.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
1924-25 ..	94,681,328	66,290,693	30,726,434	19,409,892	6,993,731	3,891,900	221,993,978
1925-26 ..	98,868,051	68,788,141	27,885,361	21,430,234	11,137,678	3,725,443	231,834,908
1926-27 ..	102,534,388	71,102,047	25,067,489	21,848,126	8,067,569	4,023,899	232,643,518
1927-28 ..	102,807,287	70,954,166	28,620,664	20,571,650	8,579,656	4,083,837	235,617,260
1928-29 ..	104,897,920	71,231,036	29,882,434	19,821,262	8,736,849	4,369,065	238,938,566

(a) See general note on first page of this Chapter.

5. *Total Value of Output.*—(i) *Total, 1928-29.* The value of the output of new goods manufactured and of repairs effected in factories of various classes in each State during 1928-29 is shown in the following table. The figures given represent not only the increase in value due to the process of manufacture, but also include the value of the raw materials and the fuel and light used. The difference between the sum of the values of the materials and the fuel and light used and the total output (see sub-section 6 hereof) is the real value of production from manufactories.

TOTAL VALUE OF OUTPUT OF FACTORIES, 1928-29.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	5,773,246	5,553,421	1,783,760	1,058,481	416,659	126,411	14,711,978
II. Treating oils and fats, animal, vegetable, etc. ..	2,673,435	1,609,640	317,372	333,900	272,634	45,771	5,252,770
III. Processes in stone, clay, glass, etc. ..	7,609,642	3,810,587	683,933	956,601	835,948	273,143	14,169,854
IV. Working in wood ..	8,245,106	4,043,117	3,327,825	1,540,190	2,055,754	622,656	19,834,648
V. Metal works, machinery, etc. ..	48,123,001	18,511,644	3,924,477	9,484,204	2,667,190	2,637,664	83,348,180
VI. Connected with food and drink, etc. ..	52,116,826	40,333,101	29,524,555	9,335,285	5,004,658	2,428,707	138,743,132
VII. Clothing and textile fabrics, etc. ..	18,686,984	27,544,210	2,788,302	2,059,270	1,534,003	1,021,624	53,634,393
VIII. Books, paper, printing, and engraving ..	9,270,165	7,153,207	1,858,006	1,372,753	963,674	327,661	20,945,466
IX. Musical instruments, etc. ..	997,111	335,387	7,796	29,580	7,655	..	1,377,529
X. Arms and explosives ..	162,397	495,262	..	1,550	..	..	659,209
XI. Motor and other road vehicles and accessories	4,197,784	3,619,896	842,772	3,305,791	743,901	218,300	12,928,444
XII. Ship and boat building and repairing ..	2,673,936	176,189	39,110	50,026	21,923	13,458	2,974,642
XIII. Furniture, bedding, and upholstery ..	4,495,570	2,820,520	839,604	701,809	589,489	151,517	9,598,509
XIV. Drugs, chemicals, and by-products ..	5,638,968	3,641,975	51,003	1,374,003	1,436,954	141,274	12,284,177
XV. Surgical and other scientific instruments ..	163,083	143,407	47,196	39,750	19,069	..	412,505
XVI. Jewellery, timepieces, and plated ware ..	403,526	560,257	47,627	61,889	34,161	6,099	1,113,559
XVII. Heat, light, and power ..	9,825,988	4,914,195	1,225,091	1,819,832	741,401	433,410	18,959,917
XVIII. Rubber goods and leatherware, n.e.l. ..	3,808,407	4,457,422	228,042	150,227	64,420	26,269	8,734,787
XIX. Other industries, n.e.l. ..	433,400	174,017	105,965	2,218	44,937	1,952	761,589
Total ..	185,298,575	127,897,463	47,641,536	33,677,368	17,454,430	8,475,916	420,445,288

New South Wales far exceeds the other States in respect of the total value of output, the value being £185,298,575, or 44.07 per cent. on the total for all States. Next in order of value is Victoria, which produced 30.42 per cent.; the value of the output of Queensland was 11.33 per cent.; of South Australia 8.01 per cent.; of Western Australia 4.15 per cent.; and of Tasmania 2.02 per cent. The two most important classes in order of value of output (Classes VI. and V.) are the same as in order of value of raw materials used.

(ii) *Totals and Averages, 1924-25 to 1928-29.* The following statement shows the value of output of factories, value per employee, and value per head of population in each State during the five years ended 1928-29:—

TOTAL VALUE OF OUTPUT OF FACTORIES, 1924-25 TO 1928-29.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
TOTAL.							
	£	£	£	£	£	£	£
1924-25 ..	159,608,873	118,177,398	49,142,436	32,143,993	13,928,782	7,842,504	380,843,986
1925-26 ..	169,963,146	119,986,439	45,900,668	35,437,147	21,449,799	7,605,194	400,342,393
1926-27 ..	179,302,446	127,397,951	41,327,767	36,888,469	15,671,660	8,104,545	408,692,838
1927-28 ..	181,403,084	128,465,317	46,462,840	35,426,174	16,998,184	8,238,410	416,994,009
1928-29 ..	185,298,575	127,897,463	47,641,536	33,677,368	17,454,430	8,475,916	420,445,288

PER EMPLOYEE.

	£	£	£	£	£	£	£
1924-25 ..	988	780	1,057	852	674	785	890
1925-26 ..	1,001	805	965	907	(b) 692	750	918
1926-27 ..	1,000	808	937	898	808	763	904
1927-28 ..	1,019	822	1,039	907	832	741	927
1928-29 ..	1,025	817	1,058	915	839	810	933

PER HEAD OF POPULATION.

	£	£	£	£	£	£	£
1924-25 ..	70.80	71.32	58.86	59.69	38.25	36.00	64.84
1925-26 ..	73.94	71.25	53.30	64.24	b 38.42	35.04	65.62
1926-27 ..	70.37	74.42	46.85	65.13	41.38	37.74	66.88
1927-28 ..	75.58	73.77	51.67	61.53	43.33	38.17	66.88
1928-29 ..	75.78	72.63	51.97	58.13	43.00	39.15	66.35

(a) See general note on first page of this Chapter.

(b) Averages computed on the estimated output for the twelve months ended 30th June, 1926.

6. *Value added in Process of Manufacture.*—(i) *Total in Classes, 1928-29.* The difference between the figures given in sub-section 5 and the sum of the corresponding figures in sub-sections 3 and 4 represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production of manufacturing industries. The following table shows the value added in this manner during 1928-29 in each State for the various classes of factories.

VALUE ADDED IN PROCESS OF MANUFACTURE, 1928-29.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	1,100,409	1,393,462	53,737	226,164	121,122	73,357	2,968,251
II. Treating oils and fats, animal, vegetable, etc. . .	903,298	575,794	127,223	100,545	78,069	18,311	1,803,240
III. Processes in stone, clay, glass, &c. . .	4,541,556	2,235,167	434,648	560,099	533,674	133,157	8,443,301
IV. Working in wood . .	3,166,037	2,179,075	1,513,334	505,061	1,014,970	336,110	8,714,587
V. Metal works, machinery, etc. . .	18,799,257	8,935,211	2,264,729	3,052,166	1,686,435	971,624	35,709,422
VI. Connected with food and drink, etc. . .	13,413,683	10,719,942	7,514,329	2,231,063	1,529,358	716,777	36,125,152
VII. Clothing and textile fabrics, etc. . .	8,871,841	12,195,057	1,342,318	961,564	719,857	407,872	24,498,509
VIII. Books, paper, printing and engraving . .	5,334,201	4,107,525	1,252,057	850,956	628,152	224,674	12,397,565
IX. Musical instruments, etc. . .	533,565	172,132	4,642	15,739	6,650	..	732,728
X. Arms and explosives	139,314	207,690	..	406	..	..	347,410
XI. Motor and other road vehicles and accessories . .	2,607,927	2,474,829	652,770	1,915,233	522,043	155,304	8,328,106
XII. Ship and boat building and repairing . .	1,665,277	128,574	25,897	38,588	15,391	11,424	1,885,151
XIII. Furniture, bedding, and upholstery . .	2,041,503	1,385,923	446,055	331,669	313,688	95,038	4,613,876
XIV. Drugs, chemicals, and by-products . .	2,701,262	1,483,807	27,052	443,031	447,993	41,279	5,144,364
XV. Surgical & other scientific instruments . .	113,640	95,384	32,418	29,239	13,912	..	284,593
XVI. Jewellery, timepieces, and plated ware . .	248,846	320,010	35,882	39,130	22,736	5,447	672,051
XVII. Heat, light and power	5,454,247	2,359,169	858,931	1,197,371	388,486	345,711	10,603,915
XVIII. Rubber goods and leatherware, n.e.i.	1,781,779	1,968,837	141,665	68,449	35,947	13,929	4,010,606
XIX. Other industries, n.e.i.	209,859	87,691	24,788	1,904	15,067	1,180	340,489
Total ..	73,627,441	53,025,279	16,752,475	12,568,377	8,093,550	3,556,194	167,623,316

(ii) *Totals and Averages, 1924-25 to 1928-29.* The amount of the value added is in much the same order as in the case of value of output, the six most important classes being VI., V., VII., VIII., XVII. and IV., in the order named. The value added to raw materials by process of manufacture and the amount per employee and per head of population are shown in the following table for the years 1924-25 to 1928-29:—

**FACTORIES.—VALUE ADDED IN PROCESS OF MANUFACTURE,
1924-25 TO 1928-29.**

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
1924-25 ..	59,044,051	48,922,070	17,633,618	11,579,199	6,542,298	3,415,522	147,136,758
1925-26 ..	64,838,370	48,041,916	16,880,777	12,673,999	9,611,113	3,378,084	155,424,259
1926-27 ..	69,849,044	52,903,456	15,269,660	13,655,406	7,054,295	3,593,412	162,325,273
1927-28 ..	71,804,512	53,798,265	16,809,873	13,487,671	7,831,563	3,670,888	167,402,772
1928-29 ..	73,627,441	53,025,279	16,752,475	12,568,377	8,093,550	3,556,194	167,623,316

(a) See general note on first page of this Chapter.

FACTORIES—VALUE ADDED IN PROCESS OF MANUFACTURE, 1924-25 TO 1928-29—*continued*.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
PER EMPLOYEE.							
1924-25 ..	£ 365	£ 323	£ 379	£ 307	£ 317	£ 342	£ 344
1925-26 ..	382	322	355	325	(b) 310	333	356
1926-27 ..	389	336	346	332	364	338	358
1927-28 ..	403	344	376	345	384	330	372
1928-29 ..	407	339	372	341	389	340	372

PER HEAD OF POPULATION.							
1924-25 ..	£ 26.19	£ 29.52	£ 21.12	£ 21.50	£ 17.97	£ 15.68	£ 25.05
1925-26 ..	28.21	28.53	21.99	22.98	b 17.22	15.56	25.40
1926-27 ..	29.75	30.90	17.31	24.11	18.63	16.73	26.56
1927-18 ..	29.92	30.89	18.69	23.43	19.96	17.01	26.85
1928-29 ..	30.11	30.11	18.27	21.69	19.94	16.43	26.45

(a) See general note on first page of this chapter.

(b) Averages computed on the estimated added value for the twelve months ended 30th June, 1926.

7. Value of Output and Cost of Production.—As the total value of the output for Australia for 1928-29 was estimated at £420,445,288, there remained, after payment of £238,938,566, the value of the materials used, of £90,986,908 for salaries and wages, and of £13,883,406 for fuel, the sum of £76,636,408 to provide for all other expenditure and profits. The following table gives corresponding particulars for each State expressed absolutely, and as percentages on the total value of the output for the year 1928-29 :—

FACTORIES.—VALUE OF OUTPUT AND COST OF PRODUCTION, 1928-29.

State.	Materials Used. (a)	Fuel and Light.	Salaries and Wages.	All other Expenditure, Interest, and Profits.	Total Value of Output.
VALUE AND COST, ETC.					
New South Wales ..	£ 104,897,920	£ 6,773,214	£ 38,544,687	£ 35,082,754	£ 185,298,575
Victoria ..	71,231,036	3,641,148	29,466,767	23,558,512	127,897,463
Queensland ..	29,882,434	1,006,627	9,097,624	7,654,851	47,641,536
South Australia ..	19,821,262	1,287,729	7,609,813	4,958,564	33,677,368
Western Australia ..	8,736,849	624,031	4,373,090	3,720,460	17,454,430
Tasmania ..	4,369,065	550,657	1,894,927	1,661,267	8,475,916
Australia ..	238,938,566	13,883,406	90,986,908	76,636,408	420,445,288

PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.

New South Wales ..	% 56.61	% 3.66	% 20.80	% 18.93	% 100.00
Victoria ..	55.69	2.85	23.04	18.42	100.00
Queensland ..	62.72	2.11	19.10	16.07	100.00
South Australia ..	58.86	3.82	22.60	14.72	100.00
Western Australia ..	50.06	3.58	25.05	21.31	100.00
Tasmania ..	51.55	6.50	22.35	19.60	100.00
Australia ..	56.83	3.30	21.64	18.23	100.00

(a) Including the values of containers, packing, etc., also the cost of tools replaced and repairs to plant.

§ 8. Value of Land, Buildings, Plant, and Machinery.

1. General.—As an indication of the permanent character and stability of the industries which have been established in Australia, it may be noted that the values of land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole of Australia the total value of land and buildings and plant and machinery has increased from 1924–25 to 1928–29 by £38,864,042, i.e., from £200,484,807 to £239,348,849, or at the rate of £9,716,011 per annum.

The following statement shows the values of land and buildings and of plant and machinery used in connexion with manufacturing industries in each State during the year 1928–29 :—

VALUE OF LAND, BUILDINGS, PLANT, AND MACHINERY, 1928–29.

Value of—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Land and buildings	51,375,003	36,184,460	9,665,239	8,934,405	5,808,539	2,688,415	114,656,061
Plant and machinery	51,365,710	33,724,910	16,719,349	10,382,257	6,154,115	6,346,447	124,692,788
Total ..	102,740,713	69,909,370	26,384,588	19,316,662	11,962,654	9,034,862	239,348,849

The total capital invested in land, buildings, plant and machinery in manufacturing industries in Australia during the year 1928–29 was approximately £239,348,849 (or £37 15s. 5d. per head of population); of that sum, £114,656,061 was invested in land and buildings occupied as manufactories, the remaining £124,692,788 being the value of the plant and machinery used in connexion therewith.

2. Value of Land and Buildings.—(i) *Total, Australia, 1924–25 to 1928–29.* The value of the land and buildings occupied in connexion with manufacturing industries may be conveniently classified according to the nature of the industry concerned.

The following table shows for Australia as a whole the approximate value of land and buildings occupied in connexion with manufacturing industries of various classes during each year from 1924–25 to 1928–29 inclusive :—

VALUE OF LAND AND BUILDINGS.—AUSTRALIA, 1924–25 TO 1928–29.

Class of Industry.	1924–25.(a)	1925–26.(a)	1926–27.	1927–28.	1928–29.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	2,249,180	2,273,275	2,257,921	2,108,813	2,072,791
II. Treating oils and fats, animal, vegetable, etc. ..	1,024,779	1,022,445	982,573	1,097,949	1,008,214
III. Processes in stone, clay, glass, etc. ..	4,247,108	4,368,411	4,687,979	4,916,868	5,102,907
IV. Working in wood ..	4,322,832	4,620,929	4,325,257	4,438,903	4,452,016
V. Metal works, machinery, etc. ..	14,389,282	15,382,362	16,649,605	17,399,778	18,253,678
VI. Connected with food and drink, etc. ..	19,568,157	20,802,518	21,892,282	24,708,527	26,013,697
VII. Clothing and textile fabrics, etc. ..	14,841,895	15,289,607	16,464,556	17,222,358	17,770,668
VIII. Books, paper, printing, and engraving ..	7,376,113	8,022,096	8,544,071	9,310,538	9,528,079
IX. Musical instruments, etc. ..	325,792	356,935	427,333	450,506	466,710
X. Arms and explosives ..	417,831	573,136	597,519	587,493	619,069
XI. Motor and other road vehicles and accessories ..	6,175,406	7,130,967	8,546,494	8,515,210	8,565,875
XII. Ship and boat building and repairing ..	1,822,238	1,852,896	1,717,756	1,718,777	1,764,487
XIII. Furniture, bedding, and upholstery ..	2,693,412	2,947,986	3,155,723	3,231,962	3,396,394
XIV. Drugs, chemicals, and by-products ..	2,453,897	2,565,553	2,815,161	3,199,653	3,467,608
XV. Surgical and other scientific instruments ..	274,283	259,766	296,435	282,113	335,285
XVI. Jewellery, timepieces, and plated ware ..	629,775	679,828	666,618	682,038	659,734
XVII. Heat, light, and power ..	7,170,768	7,107,993	7,600,312	7,805,082	8,523,226
XVIII. Leatherware, n.e.i. ..	401,588	409,110	61,516,040	62,065,878	62,324,083
XIX. Other Industries, n.e.i. ..	857,571	869,819	201,543	283,947	343,540
Total ..	91,241,907	96,535,632	103,345,178	110,026,398	114,656,061

(a) See general note on first page of this Chapter.

(b) Includes Rubber Goods formerly in Class XIX. Other Industries n.e.i.

As shown in the above table, the total net increase during the four years was £23,414,154, or an annual average of £5,853,539. The largest increases were in Classes VI., V., VII., VIII., XI. and XVII., and amounted to £6,445,540; £3,864,396; £2,928,773; £2,149,966; £2,390,469, and £1,352,458 respectively.

(ii) *Value in each State, 1928-29.* The following table gives similar information for each State for the past year:—

VALUE OF LAND AND BUILDINGS.—STATES, 1928-29.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	853,808	909,050	85,482	124,558	84,543	15,350	2,072,791
II. Treating oils and fats, animal, vegetable, etc.	515,017	267,410	89,917	104,323	24,037	7,510	1,008,214
III. Processes in stone, clay, glass, etc.	2,782,113	1,294,570	175,030	383,013	206,872	261,309	5,102,907
IV. Working in wood	2,093,375	1,070,760	477,271	286,567	390,189	133,854	4,452,016
V. Metal works, machinery, etc.	9,194,862	4,996,240	1,118,478	1,526,238	909,858	508,002	18,253,678
VI. Connected with food and drink, etc.	9,742,433	7,247,890	4,525,253	2,283,679	1,459,744	754,698	26,013,697
VII. Clothing and textile fabrics, etc.	7,504,511	7,533,190	688,487	964,040	675,908	404,532	17,770,668
VIII. Books, paper, printing, and engraving	4,109,844	3,151,860	886,009	803,547	463,515	111,304	9,526,079
IX. Musical instruments, etc.	249,807	183,780	850	22,363	9,910	..	466,710
X. Arms and explosives	160,429	453,640	..	5,000	..	..	619,069
XI. Motor and other road vehicles and accessories	8,527,039	2,604,870	595,964	1,054,742	562,895	220,365	8,565,875
XII. Ship and boat building and repairing	1,507,569	197,360	7,987	30,175	5,305	6,091	1,754,487
XIII. Furniture, bedding, and upholstery	1,642,255	1,055,570	242,123	222,374	182,098	51,974	3,396,394
XIV. Drugs, chemicals, and by-products	1,671,040	919,240	66,881	354,255	384,938	71,254	3,467,608
XV. Surgical and other scientific instruments	140,815	120,660	18,535	33,810	21,465	..	335,285
XVI. Jewellery, timepieces, and plated ware	257,558	270,190	31,531	48,200	34,350	17,905	659,734
XVII. Heat, light, and power	4,152,797	2,800,650	541,315	573,281	343,362	111,821	8,523,226
XVIII. Rubber goods and leatherware, n.e.i.	1,065,478	1,033,890	58,689	111,855	42,725	11,446	2,324,083
XIX. Other industries, n.e.i.	204,253	73,640	55,437	2,385	6,825	1,000	343,540
Total	51,375,003	36,184,460	9,665,239	8,934,405	5,808,539	2,688,415	114,656,061

The maximum value for Australia of land and buildings in any particular class was in Class VI., amounting to £26,013,697, or 22.69 per cent. on the total value. The next in order of importance were Classes V., VII., VIII., XI. and XVII., in which the values were £18,253,678; £17,770,668; £9,526,079; £8,565,875, and £8,523,226 respectively. The sum of the values for the six classes mentioned amounted to £84,961,493, or 77.32 per cent. on the total value for all classes.

(iii) *Value in each State, 1924-25 to 1928-29.* The total value of factory land and buildings at the end of each year from 1924-25 to 1928-29 is given hereunder.

VALUE OF LAND AND BUILDINGS, 1924-25 TO 1928-29.

Year. (a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
1924-25 ..	41,351,080	28,468,160	7,873,660	6,882,119	4,562,184	2,104,704	91,241,907
1925-26 ..	43,954,312	29,847,370	8,155,604	7,520,625	4,355,161	2,202,560	96,535,632
1926-27 ..	46,950,706	32,269,655	8,645,580	8,207,999	4,822,145	2,449,093	103,345,178
1927-28 ..	49,414,310	34,761,340	9,123,821	8,786,280	5,381,864	2,658,778	110,026,393
1928-29 ..	51,375,003	36,184,460	9,665,239	8,934,405	5,808,539	2,688,415	114,656,061

(a) See general note on first page of this Chapter.

Since 1924-25 there has been a marked increase throughout Australia, the States showing the greatest progress being New South Wales, Victoria, and South Australia, with average annual increases of £2,505,981, £1,929,075, and £513,072 respectively.

3. Value of Plant and Machinery.—(i) *Total, Australia, 1924-25 to 1928-29.* The following table shows for Australia as a whole the approximate value of plant and machinery used in factories during each year from 1924-25 to 1928-29 inclusive :—

VALUE OF PLANT AND MACHINERY.—AUSTRALIA, 1924-25 TO 1928-29.

Class of Industry.	1924-25.(a)	1925-26.(a)	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	2,065,838	2,130,333	2,043,422	1,804,612	1,802,487
II. Treating oils and fats, animal, vegetable, etc.	1,166,482	1,322,592	1,207,096	1,015,775	1,007,548
III. Processes in stone, clay, glass, etc.	5,781,144	5,928,978	6,509,183	6,422,300	6,643,768
IV. Working in wood	5,405,755	5,562,722	5,171,047	4,827,638	4,615,488
V. Metal works, machinery, etc.	19,723,951	21,015,046	21,836,505	21,194,939	21,733,398
VI. Connected with food and drink, etc.	22,845,337	25,368,336	26,283,623	27,401,095	28,040,253
VII. Clothing and textile fabrics, etc.	7,164,675	7,251,468	8,235,014	8,191,144	8,013,923
VIII. Books, paper, printing, and engraving	7,282,913	7,736,172	8,114,407	8,187,155	8,422,027
IX. Musical instruments, etc.	111,238	140,000	195,203	197,703	218,124
X. Arms and explosives	309,017	328,458	337,291	368,961	405,530
XI. Motor and other road vehicles and accessories	1,524,491	1,896,950	2,157,518	2,630,624	2,681,231
XII. Ship and boat building and repairing	1,888,127	1,949,848	2,093,447	2,081,791	2,155,557
XIII. Furniture, hedding, and upholstery	743,217	891,450	957,976	961,486	1,078,168
XIV. Drugs, chemicals, and by-products	2,289,112	2,460,230	2,800,020	3,171,262	3,407,246
XV. Surgical and other scientific instruments	55,094	58,143	60,411	61,329	70,829
XVI. Jewellery, timepieces, and plated ware	144,983	159,058	139,185	147,984	136,632
XVII. Heat, light, and power	29,538,177	26,752,765	27,175,926	30,638,949	32,196,267
XVIII. Leatherware, n.e.i.	99,684	93,340	b 1,357,774	b 1,847,052	b 1,972,401
XIX. Other industries, n.e.i.	1,103,665	1,232,261	72,137	78,016	91,911
Total	109,242,900	112,278,150	116,747,185	121,227,815	124,692,788

(a) See general note on first page of this Chapter.

(b) Includes Rubber Goods formerly in Class XIX., Other Industries n.e.i.

During the past four years there has been a steady and substantial net increase amounting in all to £15,449,888, or an annual average of £3,862,472. All classes of industry but four participated, the largest increase being in Class VI., "Connected with Food and Drink, etc." where it amounted to £5,194,916, while the next in order were Class XVII., "Heat, Light, and Power," £2,658,090, and Class V., "Metal Works, Machinery, etc.," £2,009,447.

(ii) *Value in each State, 1924-25 to 1928-29.* The figures in the previous table refer to Australia as a whole. In the following table results are shown for each State, and it will be seen that the increase is general throughout the States. New South Wales shows the largest advance, viz., £7,811,810; while South Australia came next with £2,862,403, followed closely by Queensland with £2,716,873.

VALUE OF PLANT AND MACHINERY.—STATES, 1924-25 TO 1928-29.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
1924-25	43,553,900	32,563,815	14,002,476	7,529,854	4,864,253	6,728,602	109,242,900
1925-26	45,994,534	30,549,130	15,226,566	8,322,025	5,480,905	6,704,990	112,278,150
1926-27	48,659,375	31,580,350	16,043,679	8,741,929	5,310,140	6,411,712	116,747,185
1927-28	50,489,675	32,745,680	16,592,358	9,421,202	5,553,295	6,425,605	121,227,815
1928-29	51,365,710	33,724,910	16,719,349	10,382,257	6,154,115	6,346,447	124,692,788

(a) See general note on first page of this Chapter.

(iii) *Value according to Industry, 1928-29.* The following table shows the value of plant and machinery used in factories in each State during 1928-29, classified according to the nature of the industry in which used :—

VALUE OF PLANT AND MACHINERY.—INDUSTRIES, 1928-29.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	713,342	705,050	132,571	110,201	73,030	68,293	1,802,487
II. Treating oils and fats, animal, vegetable, etc. . .	440,020	317,620	89,603	111,709	45,877	2,719	1,007,548
III. Processes in stone, clay, glass, etc. . .	3,729,096	1,356,600	317,380	538,588	329,992	372,112	6,643,768
IV. Working in wood . .	1,329,871	1,045,900	742,870	190,254	1,080,978	225,615	4,615,488
V. Metal works, machinery, etc. . .	12,272,574	4,151,130	1,139,159	1,976,984	741,048	1,452,503	21,733,398
VI. Connected with food and drink, etc. . .	8,566,322	6,273,170	9,516,512	1,911,652	1,431,643	340,954	28,040,253
VII. Clothing and textile fabrics, etc. . .	2,585,317	4,340,960	247,221	292,494	199,303	348,628	8,013,923
VIII. Books, paper, printing, and engraving . .	3,799,826	2,829,760	622,491	656,270	387,736	125,944	8,422,027
IX. Musical instruments, etc. . .	162,759	47,920	100	6,502	843	..	218,124
X. Arms and explosives . .	76,260	328,870	..	400	..	..	405,530
XI. Motor and other road vehicles and accessories . .	682,950	993,170	118,186	740,158	115,319	31,448	2,681,231
XII. Ship and boat building and repairing . .	1,988,534	110,950	37,144	3,951	2,328	12,650	2,155,557
XIII. Furniture, bedding and upholstery . .	514,059	282,790	90,368	109,458	59,071	22,422	1,078,168
XIV. Drugs, chemicals, and by-products . .	1,010,593	1,030,020	14,126	658,133	644,053	50,321	3,407,246
XV. Surgical and other scientific instruments . .	32,625	23,280	7,213	4,335	3,376	..	70,829
XVI. Jewellery, timepieces, and plated ware . .	46,886	67,820	6,467	9,715	4,062	1,682	136,632
XVII. Heat, light and power . .	12,483,034	8,775,670	3,594,481	3,043,415	1,014,197	3,285,470	32,196,267
XVIII. Rubber Goods and Leatherware, n.e.i. . .	884,898	1,025,290	25,064	17,498	14,806	4,845	1,972,401
XIX. Other industries, n.e.i. . .	46,744	18,940	18,893	540	6,453	841	91,911
Total . .	51,365,710	33,724,910	16,719,349	10,382,257	6,154,115	6,346,447	124,692,788

The greatest value for any particular class of industry is for class XVII., "Heat, Light and Power," and amounts to £32,196,267, or 25.82 per cent. on the total for all classes. The next in order of importance is Class VI., "Connected with Food and Drink, etc.," amounting to £28,040,253, or 22.49 per cent. on the total, followed by Class V., "Metal Works, Machinery, etc.," which amounts to £21,733,398 or 17.48 per cent. on the total value. The total for these three classes amounts to £81,969,918, or 65.74 per cent. on the total value for all classes.

§ 9. Individual Industries.

1. *General.*—The preceding remarks and tables furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories adopted by the Conference of Statisticians in 1906. In order to make the information complete, it is necessary to furnish details of the development of individual industries. While it is not possible, within the limits of this work, to give a full and detailed account of all the manufacturing industries of Australia, it is proposed to deal herein with such particular industries as are of special importance by reason of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only one or two establishments of a particular class in any State, returns relative to output are not published, in order to avoid disclosing information as to the operations of individual factories.

Reference has already been made to the change in method of computing the average number of persons employed in manufacturing industries. (See § 4 *ante*.) In the following tables relating to individual industries the number of employees shown in each case for the year 1928-29 has been computed by the new method, while those for previous years are on the old basis. The employment figures for each year of the period 1924-25 to 1927-28 are, therefore, somewhat in excess of the average number employed over the twelve months.

2. **Tanneries.**—(i) *Details for each State, 1928-29.* In Class I. the most important industry is tanning. Formerly the production of tanneries in Australia was confined to the coarser class of leathers, but there are now very few kinds which cannot be produced locally, and by reason of their superiority an export trade has been built up in some varieties.

TANNERIES, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	Australia.
Number of factories	69	42	14	8	7	2	142
Number of employees	1,175	1,879	268	163	114	89	3,688
Actual horse-power of engines employed	2,962	4,005	453	438	303	218	8,379
Approx. value of land and buildings £	253,423	472,830	28,792	25,863	41,788	12,439	835,135
Approx. value of plant and machinery £	164,981	366,680	31,780	23,205	33,836	7,813	628,295
Total amount of wages paid during year £	287,453	433,997	49,998	36,977	24,290	15,363	828,078
Value of fuel used £	27,356	42,842	4,550	4,500	2,484	1,056	82,788
Value of materials used £	1,582,515	1,914,562	238,502	140,895	110,809	40,417	4,027,700
Total value of output £	2,089,373	2,722,296	346,792	198,315	170,427	68,553	5,593,756
Value added in process of manufacture £	479,502	764,892	103,740	52,920	57,134	25,080	1,483,268

(ii) *Development in Australia, 1924-25 to 1928-29.* The development of the tanning industry during the period 1924-25 to 1928-29 is shown in the following table :—

TANNERIES.—AUSTRALIA, 1924-25 TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	155	156	152	142	142
Number of employees	4,189	4,347	4,206	3,607	(a) 3,688
Actual horse-power of engines used	8,149	8,672	8,392	8,041	8,379
Approx. value of land and buildings £	879,185	902,089	917,997	835,376	835,135
Approx. value of plant and machinery £	694,603	729,546	730,857	669,575	628,295
Total amount of wages paid £	908,492	959,653	945,598	825,841	828,078
Value of fuel used £	80,858	84,041	81,274	87,748	82,788
Value of materials used £	3,507,778	3,908,737	3,701,332	3,835,412	4,027,700
Value of final output £	5,171,005	5,564,646	5,443,334	5,435,810	5,593,756
Value added in process of manufacture £	1,582,369	1,571,868	1,660,728	1,512,650	1,483,268

(a) See § 9. I.

Decreases were recorded in both the number of factories and employees in the tanning industry during the past four years. The output, however, remained fairly constant, the production of leather during each of the years 1924-25 to 1928-29 being as follows :— 1924-25, 48,911,506 lb.; 1925-26, 55,078,267 lb.; 1926-27, 53,885,830 lb.; 1927-28, 45,353,368 lb.; and 1928-29, 47,207,759 lb.

(iii) *Raw Material Used and Production, 1928-29.* The quantities of raw material used and leather produced in tanneries in each State are shown in the following table :—

TANNERIES.—RAW MATERIAL USED AND PRODUCTION, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Hides and calf skins No. ..	975,535	1,082,917	170,971	47,706	50,628	26,791	2,354,548
Sheep pelts	2,481,917	653,350	61,285	126,367	13,417	..	3,336,336
Other skins	526,470	477,002	75,269	2,756	..	..	1,081,497
Bark tons ..	9,078	10,931	1,838	792	574	450	23,063
Leather made lb. ..	19,396,619	20,825,649	3,071,791	1,257,759	1,952,941	703,000	47,207,759
Basils produced	1,990,712	692,244	81,805	126,377	..	..	2,891,138

3. **Fellmongering and Wool-scouring Works.**—(i) *Details for each State, 1928-29.* The next industry in importance in Class I. is that of fellmongering and wool-scouring, one of the earliest industries established in Australia. The following table gives particulars of the industry in each State during the past year :—

FELLMONGERING AND WOOL-SCOURING WORKS, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	Australia.
Number of factories	31	32	14	5	5	..	87
Number of employees	674	449	419	116	80	..	1,738
Actual horse-power of engines used	2,076	1,646	831	229	205	..	4,987
Approx. value of land and buildings £	174,034	189,290	41,439	22,739	35,046	..	462,548
Approx. value of plant and machinery £	156,767	173,310	74,618	29,326	26,364	..	460,385
Total amount of wages paid	£ 150,594	£ 102,599	£ 45,676	£ 20,747	£ 16,244	..	£ 335,860
Value of fuel used	£ 28,438	£ 27,381	£ 9,356	£ 4,329	£ 1,844	..	£ 71,348
Value of materials used	£ 1,969,370	£ 1,661,155	£ 1,326,293	£ 301,630	£ 141,852	..	£ 5,400,300
Value of final output	£ 2,175,240	£ 1,949,721	£ 1,212,186	£ 331,046	£ 176,318	..	£ 5,844,511
Value added in process of manufacture £	177,432	261,185	—123,463	25,087	32,622	..	372,863

(ii) *Development in Australia, 1924-25 to 1928-29.* The following return furnishes particulars of fellmongering and wool-scouring establishments in Australia for the last five years :—

**FELLMONGERING AND WOOL-SCOURING WORKS.—AUSTRALIA,
1924-25 TO 1928-29.**

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	94	93	93	90	87
Number of employees	1,997	2,195	2,175	1,901	1,738
Actual horse-power of engines used	5,458	5,734	4,993	4,798	4,987
Approx. value of land and buildings £	570,258	537,540	527,306	485,521	462,548
Approx. value of plant and machinery £	668,960	704,789	595,632	468,054	460,385
Total amount of wages paid	£ 356,938	£ 398,278	£ 463,313	£ 387,696	£ 335,860
Value of fuel used	£ 75,706	£ 85,308	£ 94,866	£ 82,748	£ 71,348
Value of materials used	£ 7,813,400	£ 6,324,429	£ 7,224,472	£ 6,989,508	£ 5,400,300
Value of final output	£ 8,343,973	£ 7,130,008	£ 8,031,769	£ 7,363,212	£ 5,844,511
Value added in process of manufacture £	454,867	720,271	712,431	290,956	372,863

(a) See § 9.1.

The wool-scouring industry developed considerably under the régime of the Central Wool Committee, and during 1919-20 the record output of 107,726,653 lb. of scoured wool was produced. The production declined considerably since that date, however, and during 1928-29 only 86,473,983 lb. of greasy wool and 3,736,880 skins were treated for an output of 51,086,708 lb. of scoured wool.

4. **Soap and Candle Factories.**—(i) *Details for each State, 1928-29.* In Class II. soap and candle factories are the most important establishments. The manufacture of these two products is frequently carried on in the same factory, so that separate returns cannot be obtained; it may, however be noted that the manufacture of soap is the more important. The following table gives particulars of soap and candle factories in each State during the year 1928-29 :—

SOAP AND CANDLE FACTORIES, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	Australia.
Number of factories	27	17	10	6	6	1	67
Number of employees	1,080	671	179	239	170	44	2,383
Actual horse-power of engines employed	1,196	851	193	374	a	a	3,550
Approx. value of land and buildings £	352,700	188,840	38,795	89,243	a	a	701,125
Approx. value of plant and machinery £	304,446	240,640	32,281	92,648	a	a	718,611
Total amount of wages paid during year £	218,551	137,903	39,495	51,131	a	a	489,341
Value of fuel used	39,747	39,289	3,164	7,221	a	a	100,555
Value of materials used	£ 908,765	£ 719,465	£ 116,161	£ 177,722	a	a	£ 2,133,004
Total value of output	£ 1,613,066	£ 1,230,451	£ 227,696	£ 272,340	a	a	£ 3,661,958
Value added in process of manufacture £	664,554	471,697	108,371	87,397	a	a	1,428,399

(a) Particulars not available for publication.

(b) Including Western Australia and Tasmania.

(ii) *Development in Australia, 1924-25 to 1928-29.* The following table gives similar particulars for the last five years as regards Australia as a whole :—

SOAP AND CANDLE FACTORIES.—AUSTRALIA, 1924-25 TO 1928-29.

Items.	1924-25.a	1925-26.a	1926-27.a	1927-28.a	1928-29.a
Number of factories	67	66	66	66	67
Number of employees	2,425	2,487	2,507	2,362	62,383
Actual horse-power and engines used	2,744	2,962	2,933	3,084	3,550
Approx. value of land and buildings £	637,819	638,013	636,116	743,823	701,125
Approx. value of plant and machinery £	775,027	893,712	843,399	689,718	718,611
Total amount of wages paid	£ 454,149	£ 492,780	£ 493,505	£ 473,550	£ 489,341
Value of fuel used	£ 83,138	£ 104,397	£ 112,885	£ 98,745	£ 100,555
Value of materials used	£ 2,037,505	£ 2,145,157	£ 1,949,717	£ 1,988,098	£ 2,133,004
Value of final output	£ 3,365,010	£ 3,592,832	£ 3,421,379	£ 3,452,912	£ 3,661,958
Value added in process of manufacture £	1,244,367	1,342,778	1,359,277	1,366,069	1,428,399

(a) Including other small establishments in Western Australia.

(b) See § 9.1.

(iii) *Raw Material Used and Production, 1924-25 to 1928-29.* The following statement shows the quantities of certain raw material used, together with the production, in soap and candle factories in Australia during the years 1924-25 to 1928-29 :—

SOAP AND CANDLE FACTORIES.—RAW MATERIAL USED, AND PRODUCTION, AUSTRALIA, 1924-25 TO 1928-29.

Particulars.	1924-25.a	1925-26.a	1926-27.a	1927-28.a	1928-29.
Tallow used cwt.	483,756	470,101	473,787	502,903	548,112
Alkali used "	168,587	162,887	188,785	204,003	226,156
Coconut oil used gal.	798,400	783,910	800,140	807,941	1,012,246
Soap made cwt.	997,902	955,893	1,001,378	1,020,192	1,130,947
Candles made "	80,771	80,043	75,444	66,091	70,526

(a) Exclusive of Western Australia.

The total output for the year 1928-29 comprised the following quantities of the various kinds of soap manufactured :—Household, 894,698 cwt.; toilet, 114,098 cwt.; sand, 96,856 cwt.; soft, 17,505 cwt.; and other 7,790 cwt.

5. Saw-mills, etc.—(i) *Details for States, 1928-29.* The most important industry in Class IV. is that of saw-milling. As separate particulars of forest saw-mills are not available for some of the States, both forest and other saw-mills, as well as joinery, moulding, and box factories, have been combined in the following table :—

SAW-MILLS, FOREST AND OTHER ; JOINERY, ETC., 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories ..	821	533	321	140	150	199	2,164
Number of employees ..	8,451	5,647	4,929	1,558	3,014	1,376	24,975
Actual horse-power of engines employed ..	25,607	16,113	9,614	4,177	9,244	3,575	68,330
Approximate value of land and buildings ..	1,829,786	873,690	423,363	265,055	388,484	96,914	3,877,292
Approximate value of plant and machinery ..	1,166,296	921,680	646,563	182,507	1,079,320	187,894	4,184,260
Total amount of wages paid during year ..	£ 1,780,090	£ 1,211,299	£ 894,602	£ 295,764	£ 649,082	£ 186,702	£ 5,017,539
Value of fuel used ..	£ 77,269	£ 48,727	£ 29,782	£ 15,572	£ 19,793	£ 12,890	£ 204,033
Value of materials used ..	£ 4,741,970	£ 1,573,452	£ 1,599,730	£ 971,641	£ 1,019,401	£ 233,235	£ 10,139,429
Total value of output ..	£ 7,653,625	£ 3,446,830	£ 3,038,706	£ 1,455,491	£ 2,050,610	£ 532,891	£ 18,178,153
Value added in process of manufacture ..	£ 2,834,386	£ 1,824,651	£ 1,409,194	£ 468,278	£ 1,011,416	£ 286,766	£ 7,834,691

(ii) *Development in Australia, 1924-25 to 1928-29.* The development of forest and other saw-mills, etc., since 1924-25 is shown in the following table :—

**SAW-MILLS, FOREST AND OTHER ; JOINERY, ETC.—AUSTRALIA,
1924-25 TO 1928-29.**

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of establishments ..	2,312	2,340	2,244	2,168	2,164
Number of employees ..	34,041	33,309	30,217	27,399	a 24,975
Actual horse-power of engines used ..	69,099	72,924	69,813	69,912	68,330
Approx. value of land and buildings ..	£ 3,870,005	£ 4,119,714	£ 3,757,056	£ 3,878,828	£ 3,877,292
Approx. value of plant and machinery ..	£ 5,081,439	£ 5,195,973	£ 4,760,400	£ 4,428,949	£ 4,184,260
Total amount of wages paid ..	£ 6,754,128	£ 7,401,907	£ 6,074,006	£ 5,571,162	£ 5,017,539
Value of fuel used ..	£ 173,640	£ 221,458	£ 214,842	£ 221,108	£ 204,033
Value of materials used ..	£ 10,758,499	£ 11,355,751	£ 11,097,006	£ 10,751,059	£ 10,139,429
Value of final output ..	£ 21,228,966	£ 22,223,017	£ 20,712,673	£ 19,705,157	£ 18,178,153
Value added in process of manufacture ..	£ 10,296,627	£ 10,645,808	£ 9,400,825	£ 8,732,990	£ 7,834,691

(a) See § 9.1.

The effect of the depression in the saw-milling industry is reflected in the decreases recorded in the manufacturing returns during the past three years. The saw-mill output of native timber declined from 664,550,000 super. feet in 1924-25 to 516,388,000 super. feet in 1928-29.

6. Agricultural Implement Works.—(i) *General.* The manufacture of agricultural implements is an important industry in Australia, and is of particular interest, owing to the fact that it was one of the first to which it was sought to apply the so-called "New Protection." The articles manufactured include stripper-harvesters, header harvesters or reaper thrashers, strippers, reapers and binders, stump-jump and other ploughs, harrows, disc and other cultivators, winnowers, corn-shellers and baggers, drills, kerosene and petrol engines, and other implements employed in agriculture. The stripper harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is universally employed in agriculture.

(ii) *Details for States, 1928-29.* The following table gives particulars of the agricultural implement works in each State for the year 1928-29 :—

AGRICULTURAL IMPLEMENT WORKS, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	28	71	5	40	6	..	150
Number of employees	668	3,239	254	1,113	206	..	5,480
Actual horse-power of engines employed	548	2,711	46	1,286	217	..	4,808
Approx. value of land and buildings £	174,050	331,550	43,621	167,213	55,371	..	771,805
Approx. value of plant and machinery £	76,508	338,610	19,098	203,112	24,791	..	662,119
Total amount of wages paid during year £	161,658	743,598	44,467	226,159	51,838	..	1,227,720
Value of fuel used	£ 5,497	53,588	3,163	13,490	1,904	..	77,642
Value of materials used	£ 204,595	760,556	38,213	235,290	27,474	..	1,266,128
Total value of output	£ 454,740	1,885,154	110,059	552,958	164,421	..	3,167,332
Value added in process of manufacture £	244,643	1,071,010	68,683	304,178	135,043	..	1,823,562

(iii) *Development in Australia, 1924-25 to 1928-29.* The agricultural implement industry declined considerably during the war years, but great progress has since been made, and considerable increases have occurred in all the items enumerated in the following table. Details for the past five years are as follows :—

AGRICULTURAL IMPLEMENT WORKS.—AUSTRALIA, 1924-25 TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	153	148	155	157	150
Number of employees	5,585	5,691	6,636	5,729	(a) 5,480
Actual horse-power of engines used	4,439	5,344	6,002	6,355	4,808
Approx. value of land and buildings £	625,767	695,214	767,817	789,966	771,805
Approx. value of plant and machinery £	559,413	622,165	686,821	682,270	662,119
Total amount of wages paid	£ 1,181,572	1,270,555	1,501,725	1,291,380	1,227,720
Value of fuel used	£ 70,680	71,137	82,651	87,996	77,642
Value of materials used	£ 1,569,456	1,385,089	1,574,492	1,335,986	1,266,128
Value of final output	£ 3,233,008	3,228,502	3,819,449	3,303,557	3,167,332
Value added in process of manufacture £	1,642,872	1,772,276	2,162,306	1,879,575	1,823,562

(a) See § 9.1.

7. *Engineering Works.* Formerly it was impossible to record separate details for the engineering industry owing to the limited classification adopted by some of the States, but since 1926-27 these particulars have been obtained, and with one or two duplications of minor importance, the following figures are representative of the engineering industry :—

ENGINEERING WORKS, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	294	290	45	55	74	14	772
Number of employees	7,486	5,968	1,586	1,203	901	238	17,382
Actual horse-power of engines employed	9,073	8,089	2,981	1,552	1,429	317	23,441
Approximate value of land and buildings £	1,377,995	1,227,950	193,856	117,771	187,558	38,466	3,143,596
Approximate value of plant and machinery £	1,247,670	1,210,340	267,505	193,482	178,840	33,665	3,136,502
Total amount of wages paid during year	£ 1,739,991	1,402,409	335,991	252,715	182,006	54,864	3,967,976
Value of fuel used	£ 79,468	78,513	19,656	17,592	16,959	4,102	216,290
Value of materials used	£ 2,286,280	1,601,058	274,366	274,030	181,313	23,886	4,645,933
Total value of output	£ 4,897,237	3,840,472	789,593	639,767	507,216	97,616	10,771,901
Value added in process of manufacture	£ 2,531,489	2,160,901	495,571	348,145	308,944	64,628	5,909,678

In addition to engineering works which supply ordinary requirements, there is now a large number of establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining, smelting, and textile machinery and apparatus forms an important section of this industry.

8. **Ironworks and Foundries.** The extension of the classification noted in the preceding sub-section has made possible the separate publication of details for the group of industries comprised under the heading of ironworks and foundries. This combination consists of ironworks, foundries, iron safes and doors, steel castings, iron bedsteads, sash weights, steel window frames and sashes, nut and bolt making, oxy-acetylene welding, springs, horse-shoes, screws, lift making, tools, and brickmakers' implements. Particulars for the year 1928-29 are as follows:—

IRONWORKS AND FOUNDRIES, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	164	166	16	30	15	..	391
Number of employees	7,338	4,273	591	995	398	..	14,095
Actual horse-power of engines employed	35,281	7,394	1,037	1,268	411	..	45,391
Approximate value of land and buildings £	1,493,995	631,370	63,609	130,690	40,656	..	2,360,320
Approximate value of plant and machinery £	2,713,787	692,500	120,360	74,978	47,208	..	3,648,833
Total amount of wages paid during year £	2,013,771	943,087	121,172	205,873	103,166	..	3,387,069
Value of fuel used £	385,638	116,815	11,916	17,139	8,604	..	540,112
Value of materials used £	8,505,844	1,052,530	128,468	200,538	121,524	..	10,008,904
Total value of output £	12,378,380	2,641,271	298,148	495,469	267,144	..	16,080,412
Value added in process of manufacture £	3,486,898	1,471,926	157,764	277,792	137,016	..	5,531,396

9. **Railway and Tramway Workshops.**—(i) *Details for each State, 1928-29.* The railway and tramway workshops which form an important item in Class V. are chiefly State-owned institutions. The following table giving details concerning them includes, however, private and municipal establishments for manufacturing and repairing rolling-stock:—

RAILWAY AND TRAMWAY WORKSHOPS, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	42	21	14	17	22	6	122
Number of employees	14,688	6,873	3,965	3,352	2,424	356	31,658
Actual horse-power of engines employed	15,081	5,832	4,991	3,135	2,870	437	32,346
Approximate value of land and buildings £	2,721,695	1,281,270	563,192	787,761	472,783	9,450	5,836,151
Approximate value of plant and machinery £	2,922,916	1,071,360	519,200	701,381	418,685	92,047	5,726,039
Total amount of wages paid during year £	3,857,163	1,658,952	1,002,273	866,463	587,532	85,817	8,058,200
Value of fuel used £	117,588	85,281	37,302	48,929	31,330	7,006	322,936
Value of materials used £	2,964,574	1,558,582	750,648	992,503	381,266	20,061	6,667,634
Total value of output £	8,076,974	3,593,496	1,907,182	2,116,400	1,254,419	124,228	17,072,699
Value added in process of manufacture £	4,994,812	1,949,633	1,119,232	1,079,968	841,323	97,161	10,082,129

In addition to the above, a railway workshop is in operation in the Northern Territory. The work is confined almost exclusively to repairs to rolling-stock, etc., no new goods being manufactured. For the sake of convenience this establishment is not included in any of the tables in this chapter.

(ii) *Development in Australia, 1924-25 to 1928-29.* The following table shows the development of railway and tramway workshops in Australia since 1924-25:—

RAILWAY AND TRAMWAY WORKSHOPS.—AUSTRALIA, 1924-25 TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	123	121	125	122	122
Number of employees	26,345	28,558	30,715	31,315	31,658
Actual horse-power of engines used	20,965	26,168	28,938	31,819	32,346
Approx. value of land and buildings	£ 4,174,175	£ 4,491,396	£ 5,062,626	£ 5,345,963	£ 5,836,151
Approx. value of plant and machinery	£ 4,204,254	£ 5,076,776	£ 5,722,784	£ 5,338,210	£ 5,726,039
Total amount of wages paid	£ 6,140,676	£ 7,192,869	£ 7,815,202	£ 7,967,515	£ 8,058,200
Value of fuel used	£ 175,760	£ 250,632	£ 278,508	£ 294,913	£ 322,936
Value of materials used	£ 4,919,728	£ 6,008,231	£ 6,043,377	£ 6,319,442	£ 6,667,634
Value of final output	£ 12,384,177	£ 14,885,994	£ 15,589,846	£ 16,338,583	£ 17,072,699
Value added in process of manufacture	£ 7,288,689	£ 8,627,131	£ 9,267,961	£ 9,724,228	£ 10,082,129

(a) See § 9.1.

The growth of the railway and tramway systems, conjointly with heavy increases in passenger and goods traffic throughout Australia, has resulted in corresponding activity in workshops engaged in the manufacture or repair of rolling-stock, etc. During the past four years the number of employees has increased by more than 5,000, and the output has grown from £12,384,177 to £17,072,699.

10. *Metal Extraction and Ore Reduction Works.*—The following table gives particulars of metal extraction and ore reduction works. The classification of these works is not uniform in the several States, and the combination of industries is, therefore, somewhat unsatisfactory. The returns do not include particulars of plants used on mines.

METAL EXTRACTION AND ORE REDUCTION WORKS, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W.A. (a)	Tas.	Australia.
Number of factories	18	8	7	2	..	5	40
Number of employees	2,503	47	83	1,428	..	1,178	5,239
Actual horse-power of engines employed	24,339	71	618	b	..	b	c 66,534
Approx. value of land and buildings	£ 548,579	£ 17,100	£ 29,626	b	..	b	c 1,157,441
Approx. value of plant and machinery	£ 3,015,474	£ 8,040	£ 35,728	b	..	b	c 5,027,275
Total amount of wages paid during year	£ 822,725	£ 10,896	£ 11,755	b	..	b	c 1,602,643
Value of fuel used	£ 1,345,264	£ 2,221	£ 725	b	..	b	c 1,998,126
Value of materials used	£ 6,095,170	£ 97,031	£ 22,657	b	..	b	c 11,339,983
Total value of output	£ 9,813,474	£ 128,878	£ 35,345	b	..	b	c 17,171,500
Value added in process of manufacture	£ 2,373,040	£ 29,626	£ 11,963	b	..	b	c 3,833,391

(a) In Western Australia all the plants are worked on the mines, and are therefore not included.
 (b) Information not available for publication. (c) Including South Australia and Tasmania.

11. Bacon-curing Factories.—(i) *Details for each State, 1928-29.*—The following table gives particulars of factories engaged in bacon-curing in each State during the past year :—

BACON-CURING FACTORIES, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus- tralia.
Number of factories	23	19	8	8	5	6	69
Number of employees	342	556	555	171	50	37	1,711
Actual horse-power of engines employed	960	1,838	1,354	377	122	99	4,750
Approximate value of land and buildings	£ 159,991	228,250	190,883	60,889	19,503	12,498	672,014
Approximate value of plant and machinery	£ 65,268	124,010	137,149	32,664	7,931	7,272	374,294
Total amount of salaries and wages paid	£ 98,780	138,252	143,558	43,166	12,951	7,282	443,989
Value of fuel used	£ 15,439	25,359	14,967	5,151	2,456	2,597	65,969
Value of materials used	£ 1,087,878	1,112,209	1,046,089	325,163	153,517	71,851	3,796,707
Total value of output	£ 1,369,341	1,409,897	1,563,964	409,087	187,305	94,753	5,034,347
Value added in process of manu- facture	£ 266,024	272,329	502,908	78,773	31,332	20,305	1,171,671

(ii) *Quantity and Value of Production.* The following table shows the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State for the year 1928-29 :—

BACON-CURING FACTORIES.—PIGS KILLED, AND PRODUCTION, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Aus- tralia.
PIGS KILLED.							
Number	234,643	198,131	301,943	48,685	20,792	18,531	822,725
PRODUCTS.							
Bacon and ham	lb. ^a 22,340,106	18,611,728	21,710,900	4,654,651	2,438,462	1,594,645	71,350,492
Lard	590,319	935,952	1,112,954	149,381	122,598	84,574	2,996,278

VALUE.

Bacon and ham	£ 1,163,507	1,098,728	1,038,687	287,951	161,106	81,946	3,831,925
Lard	£ 21,553	36,837	40,517	6,453	4,953	3,353	113,666
Other products	£ 160,599	274,326	471,926	114,683	21,246	9,454	1,052,234

(a) A portion of the bacon and ham treated was imported or purchased.

Bacon and ham and other pig products are dealt with more fully in Chapter XVIII., *Farmyard, Dairy, and Bee Products.*

12. Butter, Cheese, and Condensed Milk Factories.—(i) *Details for each State, 1928-29.* The subjoined table gives particulars of butter, cheese and condensed milk factories in each State during the year 1928-29 :—

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	Aus- tralia.
Number of factories	144	169	119	48	12	31	523
Number of employees	1,279	2,449	1,176	290	96	151	5,441
Actual horse-power of engines employed	8,117	7,346	7,080	887	420	369	24,219
Approximate value of land and buildings	£ 716,760	967,510	410,267	184,921	53,570	33,761	2,366,789
Approximate value of plant and machinery	£ 797,307	963,850	652,169	108,957	44,039	32,380	2,598,702
Total amount of wages paid	£ 341,468	576,081	264,737	58,005	24,157	24,552	1,289,000
Value of fuel used	£ 93,412	158,685	53,953	13,700	6,894	7,912	334,556
Value of materials used	£ 7,263,994	8,014,230	5,916,333	726,969	299,572	402,702	22,623,740
Total value of output	£ 8,008,167	9,614,084	7,006,839	881,429	375,833	479,338	26,365,690
Value added in process of manufacture	£ 650,761	1,441,169	1,036,553	140,820	69,367	68,724	3,407,394

(ii) *Development in Australia, 1924-25 to 1928-29.* The following table shows the progress of the factories in this industry during the past five years :—

**BUTTER, CHEESE, AND CONDENSED MILK FACTORIES.—AUSTRALIA,
1924-25 TO 1928-29.**

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	600	585	579	563	523
Number of employees	5,820	5,490	5,419	5,520	a 5,441
Actual horse-power of engines used	15,934	17,989	20,148	22,068	24,219
Approx. value of land and buildings	£ 1,863,439	1,964,887	2,297,656	2,392,225	2,366,789
Approx. value of plant and machinery	£ 2,385,027	2,522,367	2,649,044	2,604,018	2,598,702
Total amount of wages paid	£ 1,287,689	1,244,470	1,242,813	1,298,540	1,289,000
Value of fuel used	£ 811,685	814,188	315,004	342,404	334,556
Value of materials used	£ 19,080,739	19,248,172	17,907,326	20,529,240	22,623,740
Value of final output	£ 22,726,214	22,971,416	21,737,110	24,788,248	26,365,690
Value added in process of manufacture	£ 3,333,790	3,409,058	3,514,780	3,916,604	3,407,394

(a) See § 9.1.

(iii) *Quantity and Value of Production.* The following table shows the quantity and value of butter, cheese, and condensed milk produced, and the quantity of milk used in butter, cheese, and condensed milk factories in each State during the past year :—

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES.—PRODUCTION, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Aus- tralia.
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MILK USED (,000 OMITTED).

Butter factories gals.	192,150	200,912	159,377	16,146	6,583	12,638	587,806
Cheese "	6,589	5,169	14,178	2,807	(a)	699	29,442
Condensed milk factories	(a)	14,959	(a)	..	..	..	(b) 14,959

(a) Information not available for publication.

(b) Excluding New South Wales and Queensland.

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES.—PRODUCTION,
1928-29—*continued.*

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
PRODUCTS (,000 OMITTED).							
Butter lb.	91,733	90,264	74,387	8,157	3,622	5,385	273,548
Cheese "	6,203	5,259	14,391	2,975	(a)	681	29,509
Condensed and concentrated milk lb.	(a)	42,328	(a)	..	..	..	(b) 42,328
Powdered milk "	..	11,621	..	..	..	..	11,621
VALUE (,000 OMITTED).							
Butter £	7,173	7,398	6,143	740	305	448	22,207
Cheese £	283	316	641	111	(a)	27	1,378
Condensed and concentrated milk £	(a)	1,089	(a)	..	..	..	(b) 1,089
Powdered milk £	..	523	..	..	..	..	523

(a) Information not available for publication.

(b) Excluding New South Wales and Queensland.

The butter, cheese, and condensed milk industries are dealt with more fully in the Chapter entitled *Farmyard, Dairy, and Bee Products*.

13. **Meat and Fish Preserving Works.**—These industries are now of considerable importance in Australia. Large freezing works have been installed at many ports throughout the continent for the purpose of freezing produce chiefly for export, while insulated space for the carriage of frozen produce is provided by steamship companies trading between Australia and other parts of the world.

MEAT AND FISH PRESERVING WORKS, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	4	12	11	..	4	2	33
Number of employees	210	851	3,327	..	163	20	4,571
Actual horse-power of engines employed	(a)	3,927	9,125	..	641	..	13,867
Approximate value of land and buildings £	(a)	598,690	1,369,893	..	330,613	(a)	b 2,348,755
Approximate value of plant and machinery £	(a)	309,380	831,423	..	431,446	(a)	b 1,595,108
Total amount of wages paid during year £	(a)	229,245	614,343	..	78,477	(a)	b 970,565
Value of fuel used £	(a)	32,140	87,356	..	2,986	(a)	b 130,932
Value of materials used	(a)	1,627,355	3,134,899	..	116,849	(a)	b 5,033,781
Total value of output £	(a)	2,049,866	3,973,517	..	226,186	(a)	b 6,504,704
Value added in process of manufacture £	(a)	390,371	751,262	..	106,351	(a)	b 1,337,991

(a) Not available for publication.

(b) Including New South Wales and Tasmania.

Full particulars regarding quantities and values of beef, mutton, and lamb preserved by cold process, exported from Australia during a series of years, will be found in Chapter XVI.

14. **Bakeries.**—The following table gives particulars regarding establishments at which the manufacture of bread, cakes, etc., was carried on in each State during the year 1928-1929.

BAKERIES (INCLUDING CAKES AND PASTRY), 1928-29.

Items.	N.S.W.	Victoria.	Q'land. (b)	S. Aust.	W. Aust.	Tas. (a)	Australia.
Number of factories	328	487	220	92	65	..	1,192
Number of employees	3,097	3,248	1,981	780	314	..	9,420
Actual horse-power of engines employed	2,139	1,822	668	614	247	..	5,490
Approximate value of land and buildings	£ 1,414,939	1,087,550	383,313	265,811	106,006	..	3,257,619
Approximate value of plant and machinery	£ 467,582	368,050	168,412	91,632	32,285	..	1,127,961
Total amount of wages paid during year	£ 711,967	611,327	343,111	156,619	62,466	..	1,885,480
Value of fuel used	£ 92,355	89,942	30,372	19,317	8,058	..	240,044
Value of materials used	£ 2,110,536	2,056,334	719,415	513,796	226,704	..	5,626,785
Total value of output	£ 3,662,716	3,480,992	1,483,489	834,198	397,380	..	9,853,725
Value added in process of manufacture	£ 1,459,825	1,334,716	783,702	301,085	162,568	..	3,991,896

(a) Included with Confectionery. (b) Includes Biscuits.

15. Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Factories.—(i) *Details for each State, 1928-29.* The subjoined table gives particulars of factories at which these industries were carried on in each State during the year 1928-29.

JAM AND FRUIT PRESERVING, PICKLES, ETC., FACTORIES, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	42	88	18	16	5	7	121
Number of employees	1,822	2,126	455	571	34	470	5,478
Actual horse-power of engines employed	1,035	2,148	277	327	71	1,340	5,198
Approximate value of land and buildings	£ 324,015	453,390	48,158	118,659	13,117	101,106	1,058,445
Approximate value of plant and machinery	£ 151,126	307,560	37,886	68,435	4,859	31,363	601,229
Total amount of wages paid during year	£ 222,551	386,605	71,202	84,682	5,990	98,114	869,144
Value of fuel used	£ 19,037	37,613	3,604	7,293	323	10,552	78,422
Value of materials used	£ 818,485	1,361,167	179,814	278,667	23,626	369,003	3,030,762
Total value of output	£ 1,417,197	2,202,502	373,609	443,744	39,474	578,069	5,054,595
Value added in process of manufacture	£ 579,675	803,722	190,191	157,784	15,525	198,514	1,945,411

(ii) *Development in Australia, 1924-25 to 1928-29.* The following table refers to jam and fruit preserving, etc., establishments in Australia for the last five years:—

JAM AND FRUIT PRESERVING, PICKLES, ETC., FACTORIES.—AUSTRALIA, 1924-25 TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	164	165	164	167	121
Number of employees	6,278	6,189	6,119	6,627	5,478
Actual horse-power of engines employed	3,989	4,520	4,528	5,215	5,198
Approx. value of land and buildings	£ 937,288	1,038,819	1,084,835	1,177,963	1,058,445
Approx. value of plant and machinery	£ 616,675	615,452	634,771	748,888	601,229
Total amount of wages paid	£ 881,317	902,859	974,224	1,049,136	869,144
Value of fuel used	£ 69,152	70,549	79,311	92,373	78,422
Value of materials used	£ 3,127,593	3,135,573	3,511,388	3,703,161	3,030,762
Total value of output	£ 4,995,671	5,002,487	5,430,065	5,967,876	5,054,595
Value added in process of manufacture	£ 1,798,926	1,796,365	1,889,366	2,172,342	1,945,411

(a) See § 9.1.

The progress of the jam-making industry was very marked during the war years, when considerable quantities were exported overseas for the supply of army requirements. With the loss of this trade on the termination of the war, production declined considerably, and in 1928-29 amounted to only 75,252,189 lb., compared with 84,922,496 lb. in 1927-28, and 142,290,204 in 1918-19. The output of preserved fruit has grown to considerable proportions, and during 1928-29, 68,367,499 lb. were processed, while the production of pickles and sauces is increasing.

(iii) *Production.* The following table shows the quantity and value of jams, pickles, and sauces manufactured in each State during 1928-29 :—

JAMS, PRESERVED FRUIT, PICKLES AND SAUCES.—OUTPUT, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
QUANTITY (,000 OMITTED).							
Jams lb.	16,365	31,991	8,113	6,774	(a)	(a)	b 75,252
Pulp "	217	6,457	837	4,453	..	10,916	22,880
Fruit, preserved "	13,969	39,317	5,642	2,692	..	6,747	68,367
Pickles pints	2,538	1,804	(a)	1,081	(a)	(a)	b 5,646
Sauces "	7,468	7,906	828	4,160	(a)	(a)	b 20,757

VALUE.

Jams £	497,231	749,171	178,587	142,191	(a)	(a)	b1,889,824
Pulp £	2,250	53,475	7,774	23,725	..	133,528	220,752
Fruit, preserved £	248,638	758,040	117,204	57,185	..	121,627	1,302,694
Pickles £	73,521	75,185	12,691	25,554	(a)	(a)	b 194,040
Sauces £	437,926	305,044	24,443	132,070	(a)	(a)	b 910,557

(a) Particulars not available for publication.

(b) Including Western Australia and Tasmania.

16. *Confectionery Factories.*—(i) *Details for each State, 1928-29.* The growth of this industry will be apparent when it is stated that at the close of 1900 there were in New South Wales only 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, the plant and machinery in the former State being valued at £2,815, and in the latter at £19,070. Returns for 1928-29 are given hereunder :—

CONFECTIONERY FACTORIES, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	Australia.
Number of factories	76	156	13	22	15	38	320
Number of employees	3,187	3,040	551	406	291	911	8,386
Actual horse-power of engines employed	3,611	5,959	728	732	284	1,423	12,737
Approximate value of land and buildings £	1,028,865	570,510	151,764	102,085	57,193	293,468	2,201,885
Approximate value of plant and machinery £	1,019,563	945,360	131,782	92,598	71,538	107,367	2,368,208
Total amount of wages paid during year £	498,915	525,376	80,471	53,730	42,902	134,603	1,335,997
Value of fuel used £	55,405	85,345	9,016	11,823	4,561	17,632	183,787
Value of materials used £	1,600,914	1,590,984	134,491	178,688	159,210	334,619	3,998,906
Total value of output £	3,068,532	2,924,846	378,305	283,017	231,239	569,489	7,455,428
Value added in process of manufacture £	1,412,213	1,248,517	234,793	92,501	67,468	217,238	3,272,735

(a) Including Biscuits and Bakeries.

(ii) *Development in Australia, 1924-25 to 1928-29.* The growth of the confectionery industry during the past four years is exhibited in the following table :—

CONFECTIONERY FACTORIES.—AUSTRALIA, 1924-25 TO 1928-29.

Items.	1924-25. (a)	1925-26. (a)	1926-27. (a)	1927-28. (a)	1928-29. (a)
Number of factories	276	267	286	293	320
Number of employees	8,818	8,849	9,048	8,616	b 8,386
Actual horse-power of engines employed	12,725	13,047	14,166	14,241	12,737
Approx. value of land and buildings £	2,021,439	2,014,563	2,084,233	2,074,074	2,201,885
Approx. value of plant and machinery £	2,104,208	2,199,860	2,311,513	2,332,479	2,368,208
Total amount of wages paid during year £	1,349,717	1,391,114	1,426,779	1,365,241	1,335,997
Value of fuel used £	155,050	166,846	165,181	186,323	183,787
Value of materials used £	3,619,005	3,884,045	3,918,090	4,054,201	3,998,906
Total value of output £	6,623,828	6,993,566	7,097,911	7,300,429	7,455,428
Value added in process of manufacture £	2,849,773	2,942,675	3,014,640	3,059,905	3,272,735

(a) Including Biscuits and Bakeries in Tasmania.

(b) See § 9.1.

The confectionery industry has expanded considerably during recent years, largely as a result of the stimulus afforded by the embargo placed on the importation of luxuries during the period of the war. The establishments engaged therein found employment for 8,386 persons in 1928-29, and the value of the output amounted to £7,455,428, or more than 12 per cent. greater than the value of the production in 1924-25. The Australian market has been captured, and an export trade is being developed. Several large British manufacturers of confectionery have established branch works in Australia.

17. Flour Mills.—(i) *Details for States, 1928-29.* The following table shows the position of the flour-milling industry in each State in 1928-29 :—

FLOUR MILLS, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas. (a)	Australia.
Number of factories ..	56	41	9	36	17	10	169
Number of employees ..	1,146	985	303	488	355	107	3,384
Actual horse-power of engines employed ..	7,893	5,982	1,621	3,035	2,635	530	21,696
Approximate value of land and buildings ..	£ 804,901	468,600	145,088	222,288	231,456	59,980	1,932,313
Approximate value of plant and machinery ..	£ 884,194	634,510	157,596	335,163	272,293	48,632	2,332,388
Total amount of wages paid during year ..	£ 312,880	258,056	67,892	110,030	88,319	24,491	861,668
Value of fuel used ..	£ 75,361	59,661	11,030	31,166	21,242	5,420	203,880
Value of materials used ..	£ 5,493,782	4,610,551	735,687	1,638,671	1,409,941	334,734	14,223,366
Total value of output ..	£ 6,276,317	5,378,763	943,751	1,831,758	1,045,652	393,525	16,469,766
Value added in process of manufacture ..	£ 707,174	708,551	197,034	161,921	214,469	58,371	2,042,520

(a) The manufacture of cornflour, oatmeal, etc., was also carried on in some of these establishments.

(ii) *Production of Flour and By-products, 1924-25 to 1928-29.* The production of flour by the mills in each State for the years 1924-25 to 1928-29 was as follows :—

FLOUR MILLS.—PRODUCTION OF FLOUR, 1924-25 TO 1928-29.

Year.(b)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Tons.a	Tons.a	Tons.a	Tons.a	Tons.a	Tons.a	Tons.a
1924-25 ..	395,409	359,597	52,592	117,042	122,192	21,866	1,068,698
1925-26 ..	434,407	336,704	61,587	138,127	190,369	24,774	1,185,968
1926-27 ..	431,532	360,051	52,959	140,426	133,919	22,861	1,141,748
1927-28 ..	400,363	367,383	53,858	122,107	127,246	21,675	1,092,632
1928-29 ..	449,011	390,286	54,433	137,202	119,550	21,277	1,171,759

(a) Tons of 2,000 lb. (b) See general note on first page of this Chapter.

The total production of flour in Australia for the last year, viz., 1,171,759 tons, was valued at £12,964,802. In addition, 478,385 tons of bran and pollard, valued at £3,216,949 were made. The total quantity of wheat ground was 55,768,310 bushels.

18. Sugar Mills.—(i) *Details for 1928-29.* The following table shows the position of the cane-crushing branch of the sugar-making industry in Queensland and New South Wales in 1928-29. Sugar-cane is not grown in the other States. Details regarding the area, yield, etc., of sugar-cane will be found in Chapter XVII., *Agricultural Production.*

SUGAR MILLS, 1928-29.

Items.	N.S.W.	Queensland.	Australia.
Number of factories	3	35	38
Number of employees	375	6,077	6,452
Actual horse-power of engines employed	2,114	31,790	33,904
Approximate value of land and buildings £	133,870	878,046	1,011,916
Approximate value of plant and machinery £	538,046	6,314,762	6,852,808
Total amount of wages paid during year .. £	77,995	1,330,857	1,408,852
Value of fuel used £	7,952	205,517	213,469
Value of materials used £	259,152	7,884,897	8,144,049
Total value of output £	367,983	10,810,466	11,178,449
Value added in process of manufacture .. £	100,879	2,720,052	2,820,931

The products of the sugar mill are raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. Part of the molasses produced is used for distillation, part is prepared for human consumption, part is turned into food-cake for cattle, part is used for manuring land, and the balance is either burnt as fuel or is allowed to run to waste. This latter quantity, however, is being reduced each year.

(ii) *Progress of Industry.* (a) *New South Wales.* The following table shows the progress of this industry in New South Wales since 1924-25 :—

SUGAR MILLS.—NEW SOUTH WALES, 1924-25 TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	3	3	3	3	3
Number of employees	445	487	447	413	(a) 375
Cane crushed .. tons	228,978	297,335	230,254	208,612	147,414
Sugar produced .. tons	26,682	32,385	26,604	23,349	16,954
Molasses produced gals.	1,313,400	1,820,000	1,371,700	1,196,700	914,000

(a) See § 9.1.

The number of mills in New South Wales has been reduced to three during recent years owing chiefly to the tendency towards concentration of cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. The stability afforded the sugar industry by Government assistance referred to in the chapter dealing with agriculture has been responsible for considerable progress in the cultivation of sugar cane, and consequently increased activity has occurred in the sugar mills of New South Wales and Queensland during recent years.

(b) *Queensland.* Details for Queensland from 1911 onwards are given hereunder.

SUGAR MILLS.—QUEENSLAND, 1911 TO 1928-29.

Items.	1911.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	49	40	39	35	35
Number of employees	4,295	7,322	6,949	6,005	(a) 6,077
Cane crushed .. tons	1,534,451	3,653,860	2,930,860	3,570,743	3,741,715
Sugar produced .. tons	173,296	479,023	457,914	479,803	516,081
Molasses—					
Sold to distillers and others .. gals.	2,393,669	3,749,788	3,301,557	4,823,728	5,676,821
Used as fodder .. gals.	789,564	2,176,649	2,828,118	2,523,390	2,524,136
Used as manure .. gals.	223,000	1,287,400	89,600	473,260	7,200
Run to waste .. gals. }					
Burnt .. gals. }	1,847,333	6,278,973	4,748,015	3,495,063	3,044,889
In Stock .. gals. }	1,197,626	3,681,394	2,547,140	3,204,997	5,131,726
Total Molasses .. gals.	6,451,192	15,902,121	1,172,003	1,335,366	488,600
		18,764,416	14,686,433	15,855,804	16,873,372

(a) See § 9.1.

19. **Sugar Refineries.**—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1928-29 there were two sugar refineries in each of the States of Victoria and Queensland, and one in each of the States of New South Wales and South Australia. The quantity of raw sugar operated upon amounted to 331,071 tons, for a yield of 321,715 tons of refined sugar, valued at £11,436,158.

20. **Breweries.**—(i) *Details for each State, 1928-29.* The following table gives particulars concerning breweries in each State :—

BREWERIES, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust. (a).	Tas.	Australia.
Number of breweries	8	9	10	6	9	3	45
Number of employees	1,276	1,194	492	361	428	133	3,874
Actual horse-power of engines employed	4,124	4,180	2,113	1,466	1,544	790	14,217
Approximate value of land and buildings £	843,365	692,090	337,370	190,175	277,506	135,701	2,476,207
Approximate value of plant and machinery £	1,038,768	944,880	359,030	228,820	284,370	56,210	2,912,078
Total amount of wages paid during year £	387,017	411,714	117,575	118,676	136,034	37,683	1,208,699
Value of fuel used £	104,020	81,432	33,027	27,488	19,242	30,699	295,908
Value of raw materials used £	1,255,474	1,114,378	252,092	287,324	340,503	60,828	3,310,659
Total value of output £	3,215,957	2,522,933	576,863	651,771	784,451	169,035	7,921,010
Value added in process of manufacture £	1,856,463	1,327,123	291,744	336,959	424,646	77,508	4,314,443

(a) Includes malting.

(ii) *Development in Australia, 1924-25 to 1928-29.* The following table shows the progress of this industry during the past four years :—

BREWERIES.—AUSTRALIA, 1924-25 TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of breweries	56	52	48	46	45
Number of employees	3,965	3,812	3,844	3,881	a 3,874
Actual horse-power of engines used	13,403	13,246	13,143	14,688	14,217
Approx. value of land and buildings £	1,996,644	2,141,886	2,205,779	2,347,851	2,476,207
Approx. value of plant and machinery £	2,506,234	2,595,955	2,710,319	2,853,623	2,912,078
Total amount of wages paid	1,093,323	1,194,424	1,173,086	1,208,091	1,208,699
Value of fuel used	241,918	283,300	248,780	272,151	295,908
Value of raw materials used	3,019,592	3,577,212	3,315,441	3,318,521	3,310,659
Value of final output	7,117,029	7,842,180	7,941,978	7,964,626	7,921,010
Value added in process of manufacture £	3,855,519	3,981,668	4,377,757	4,373,954	4,314,443

(a) See § 9.1.

The main feature in the history of the brewing industry, which was established at an early date in Australia, has been the change from the small local brewery in every township of moderate size to the large centralized city brewery. This, however, has not been so much in evidence during the period embraced in the above table, the reduction of the number of establishments during recent years being mainly due to several large amalgamations. The total value of output of breweries in Australia increased from £7,117,029 in 1924-25 to £7,921,010 in 1928-29, and the quantity of ale and stout brewed rose from 67,188,370 to 73,723,234 gallons during the same period. The consumption of ale and stout per head of the population remains fairly constant in Australia, and for the year 1928-29 averaged nearly 11½ gallons.

(iii) *Materials Used and Production.* The table below shows the quantity of raw material used and the quantity and value of ale and stout brewed in each State during the year 1928–29.

BREWERIES.—MATERIALS USED AND PRODUCTION, 1928–29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
RAW MATERIAL USED.							
Malt .. bushels	992,385	806,252	199,925	197,135	196,205	45,693	2,437,600
Hops .. lb.	935,989	777,849	177,503	205,920	187,764	57,987	2,343,012
Sugar .. cwt.	110,108	110,968	25,869	24,427	29,782	4,130	305,284

RAW MATERIAL USED PER 1,000 GALLONS OF ALE AND STOUT PRODUCED.

Malt .. bushels	33.73	32.25	30.56	35.30	33.06	36.76	33.06
Hops .. lb.	31.81	31.12	27.13	36.87	31.64	46.65	31.78
Sugar .. cwt.	3.74	4.44	3.95	4.37	5.02	3.32	4.14

ALE AND STOUT BREWED.

Quantity	gallons	29,420,920	24,998,740	6,541,534	5,584,617	5,934,303	1,243,120	73,723,234
Value(a)	£	3,176,085	2,519,031	576,863	646,749	758,909	169,035	7,846,672

(a) Exclusive of excise duty.

21. *Distilleries.*—Distilleries are located in all the States with the exception of Western Australia and Tasmania. Complete details, however, are not obtainable, as the particulars for New South Wales factories are not available. The materials used in all distilleries during 1928–29 comprised 922,868 cwt. of molasses, 119,597 bushels of malt, and 8,206,881 gallons of wine, while the output of distilled spirit amounted to 6,454,847 proof gallons.

22. *Tobacco, etc., Factories.*—(i) *Details for each State, 1928–29.* During the year 1928–29 there were twenty-three establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. There were no factories engaged in this industry in Queensland or Tasmania.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1928–29.

Items.	N.S.W.	Victoria.	S. Aust.	W. Aust.	Australia.
Number of factories	8	12	1	2	23
Number of employees	2,494	1,516	21	106	4,137
Actual horse-power of engines employed ..	1,199	714	..	33	1,946
Approx. value of land and buildings .. £	527,350	253,530	(a)	(a)	b 794,421
Approx. value of plant and machinery .. £	363,150	172,710	(a)	(a)	b 543,462
Total amount of wages paid during year .. £	466,904	322,836	(a)	(a)	b 808,865
Value of fuel used	14,031	9,401	(a)	(a)	b 24,115
Value of materials used	3,344,436	1,052,641	(a)	(a)	b 4,427,806
Total value of output	£ 4,863,300	1,849,897	(a)	(a)	b 6,812,791
Value added in process of manufacture .. £	1,504,833	737,855	(a)	(a)	b 2,360,870

(a) Not available for publication.

(b) Including South Australia and Western Australia.

(ii) *Development in Australia.* This industry was among the first to be established in Australia. In 1861 New South Wales had eleven factories, producing 177,744 lb. of manufactured tobacco; in the same year there was one factory in Victoria, but the quantity of tobacco manufactured is not available. The Australian market has

for many years been largely supplied with local manufactures. The imports into Australia during 1928-29 comprised—manufactured tobacco 1,070,251 lb., cigars 108,692 lb., and cigarettes 1,019,514 lb., while the quantities manufactured in Australian factories were respectively 15,667,900 lb., 338,873 lb., and 5,357,782 lb. The following tables show the development of the tobacco manufacturing industry in Australia during recent years:—

**TOBACCO, CIGAR, AND CIGARETTE FACTORIES.—AUSTRALIA,
1924-25 TO 1928-29.**

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	27	26	24	23	23
Number of employees	4,421	4,325	4,286	4,217	a 4,137
Actual horse-power of engines used ..	1,676	1,713	1,645	1,684	1,946
Approx. value of land and buildings ..	£ 620,694	640,239	675,689	783,895	794,421
Approx. value of plant and machinery ..	£ 497,034	508,100	512,441	510,651	543,462
Total amount of wages paid	£ 781,471	800,615	812,300	818,985	808,865
Value of fuel used	£ 27,172	28,053	22,032	21,991	24,115
Value of materials used	£ 4,613,357	4,589,301	4,523,086	4,492,363	4,427,806
Value of final output	£ 6,927,087	6,892,332	6,800,026	6,817,391	6,812,791
Value added in process of manufacture ..	£ 2,286,558	2,274,978	2,254,908	2,303,037	2,360,870

LEAF USED AND PRODUCTION.

Items.	1,000 lb.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Leaf used	1,000 lb.	18,073	18,661	18,610	18,620	19,136
Tobacco made	"	14,978	15,405	15,008	15,097	15,678
Cigars	"	470	456	410	390	339
Cigarettes	"	4,873	5,134	5,309	5,391	5,358

(a) See § 9.1.

Although the manufacturing side of the tobacco industry is so firmly established in Australia, the production of locally-grown leaf is comparatively small, and manufacturers are dependent on imported leaf for the supply of their raw material. In this connexion, however, see item "Tobacco" in Chapter XVII., *Agricultural Production*. The respective quantities of Australian and imported leaf used during 1928-29 were 978,030 and 18,157,689 lb.

23. Woollen and Tweed Mills.—(i) *Details for each State, 1928-29.* The manufacture of woollens and tweeds was established in Australia at an early period in its history, and was under Government control, the first record in New South Wales dating back to 1801, when a few blankets were made by the convicts; the first record in Victoria was in 1867. The following table, which gives particulars for 1928-29, shows that the industry is now well established:—

WOOLLEN AND TWEED MILLS, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	Australia.
Number of factories	14	28	2	3	1	5	53
Number of employees	2,993	6,561	340	320	98	1,118	11,430
Actual horse-power of engines employed ..	6,704	14,455	739	897	300	1,653	24,748
Approx. value of land and buildings ..	£ 540,680	1,068,950	(a)	(a)	(a)	249,120	b 1,984,124
Approx. value of plant and machinery ..	£ 1,023,692	1,851,740	(a)	(a)	(a)	306,418	b 3,487,795
Total amount of wages paid during year ..	£ 469,019	1,053,127	(a)	(a)	(a)	139,340	b 1,766,890
Value of fuel used	£ 66,390	160,639	(a)	(a)	(a)	29,685	b 270,995
Value of materials used	£ 1,302,600	2,442,010	(a)	(a)	(a)	404,670	b 4,363,482
Total value of output	£ 2,144,234	4,308,677	(a)	(a)	(a)	648,474	b 7,477,295
Value added in process of manufacture ..	£ 775,244	1,706,028	(a)	(a)	(a)	214,119	b 2,842,818

(a) Information not available for publication.

(b) Including Queensland, South Australia, and Western Australia.

(ii) *Development in Australia, 1924-25 to 1928-29.* The progress of woollen and tweed milling in Australia during the last four years is shown in the following table :—

WOOLLEN AND TWEED MILLS.—AUSTRALIA, 1924-25 TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	49	50	53	57	53
Number of employees	7,941	8,735	11,068	11,638	a 11,430
Actual horse-power of engines used ..	16,310	18,426	22,441	23,158	24,748
Approx. value of land and buildings £	1,620,318	1,659,446	1,892,108	1,933,654	1,984,124
Approx. value of plant and machinery £	3,297,229	3,247,602	3,779,316	3,688,023	3,487,795
Total amount of wages paid .. £	1,102,718	1,222,596	1,607,595	1,755,588	1,766,820
Value of fuel used £	165,724	203,237	251,093	272,578	270,995
Value of materials used £	3,197,778	3,400,316	3,681,164	4,172,120	4,363,482
Total value of output £	5,071,124	5,758,267	6,986,296	7,601,435	7,477,295
Value added in process of manufacture £	1,707,622	2,154,714	3,054,039	3,156,737	2,842,818

(a) See § 9.1.

(iii) *Quantity and Value of Production.* The production consists chiefly of tweed cloths, flannels, rugs, blankets and yarn, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not available for publication. The total length of tweed and cloth manufactured in Australia during 1928-29 was 9,356,042 yards. In New South Wales 2,822,663 yards of tweed and cloth, and in Victoria, 5,979,625 yards were manufactured. The production of flannel amounted to 7,302,306 yards, while blankets, shawls, and rugs to the number of 1,072,459 were manufactured. The output of yarn reported was 6,213,342 lb., most of which was produced in Victoria.

In addition to the woollen and tweed factories, there were 254 hosiery and knitting mills operating throughout Australia during 1928-29. These establishments provided employment for 11,583 persons, of whom 9,146 were females, and the value of their output amounted to £6,511,541.

Cotton ginning has been carried on intermittently in the Northern States, and the recent development in cotton growing has led to the establishment of modern ginning plants at convenient centres in Queensland. In New South Wales during 1923-24 the first up-to-date mill for the manufacture of cotton goods was erected. There were twenty-two establishments treating cotton in Australia during 1928-29, and these employed 944 hands, while the value of the output was £729,132.

24. *Boot Factories.*—(i) *Boot and Shoe Factories, 1928-29.* Among the manufactures of Australia the boot and shoe industry holds an important place in regard to employment afforded and extent of output. In certain items the operations of these factories have been rather obscured in recent years by the inclusion in the returns of a large number of repair establishments, but this difficulty has been avoided by the collection of separate statistics for each industry, and in the following table the details relate to boot and shoe factories as distinct from those devoted to repairing and bespoke work :—

BOOT AND SHOE FACTORIES, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	106	198	17	17	9	7	354
Number of employees	5,290	11,507	1,067	515	378	197	18,954
Actual horse-power of engines employed	1,944	3,626	294	276	214	78	6,432
Approx. value of land and buildings £	555,394	920,590	66,584	80,449	53,596	14,430	1,691,043
Approx. value of plant and machinery £	267,622	601,740	41,362	26,656	34,392	7,179	978,951
Total amount of wages paid during year £	906,084	1,926,426	155,866	78,535	56,025	28,067	3,151,003
Value of fuel used £	15,629	41,736	2,482	1,600	1,210	674	63,391
Value of materials used £	1,434,476	3,268,297	224,190	119,671	127,221	54,172	5,228,027
Total value of output £	2,703,438	6,196,085	457,397	211,826	210,542	95,753	9,874,541
Value added in process of manufacture £	1,253,333	2,886,052	230,725	89,995	82,111	40,907	4,583,123

(ii) *Boot Repairing, including Bespoke Work.* The introduction of small power plants in repairing shops has brought this class of establishment within the meaning of a factory for statistical purposes. These shops have spread rapidly throughout the Commonwealth, and during 1928-29 the number recorded amounted to 1,064, in which 2,136 hands were employed. The sum of £222,140 was distributed in salaries and wages, and the total output value was £950,450.

(iii) *Quantity and Value of Production.* The number and value of boots, shoes, and slippers made at factories in each State are shown in the following table:—

BOOT AND SHOE FACTORIES.—OUTPUT, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
QUANTITY (,000 OMITTED).							
Boots and shoes... pairs	3,817	7,857	641	375	356	139	13,185
Slippers	1,292	2,493	11	21	101	..	3,918
Uppers (a)	62	69	2	9	..	3	145
VALUE.							
Boots and shoes.. £	2,437,699	5,301,747	452,729	198,552	197,072	95,225	8,683,024
Slippers £	189,324	385,019	3,961	6,510	15,139	..	599,053
Uppers (a) £	19,155	21,473	973	3,481	99	845	46,026

(a) Made for other than factory use.

25. *Clothing (Tailoring and Slop) Factories.*—(i) *Details for each State, 1928-29.* The importance of this industry in the several States is shown in the following table:—

CLOTHING (TAILORING AND SLOP) FACTORIES, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	533	516	131	132	90	38	1,440
Number of employees	11,571	8,598	2,916	2,059	1,307	502	26,953
Actual horse-power of engines employed	882	574	147	99	74	26	1,802
Approximate value of land and buildings £	2,161,893	1,194,600	299,866	381,464	270,600	81,045	4,389,478
Approximate value of plant and machinery £	141,690	113,850	32,960	24,929	18,673	4,955	337,057
Total amount of wages paid during year £	1,583,146	1,141,763	319,166	246,587	174,462	59,870	3,524,994
Value of fuel used £	24,196	24,741	6,976	6,032	3,095	60	65,100
Value of materials used £	2,040,650	1,934,230	452,634	339,522	270,472	55,181	5,092,739
Total value of output £	4,444,557	3,652,907	1,073,388	733,865	556,496	141,661	10,602,374
Value added in process of manufacture £	2,379,711	1,693,886	613,778	388,311	282,929	86,420	5,445,035

(ii) *Development in Australia, 1924-25 to 1928-29.* The tailoring and slop branch of the clothing industry has made little progress during the past four years. The number of factories and persons employed have declined, while the value of raw material used and output have remained practically constant. Details for the past five years are as follow:—

CLOTHING (TAILORING AND SLOP) FACTORIES.—AUSTRALIA, 1924-25 TO 1928-29.

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories	1,472	1,481	1,465	1,422	1,440
Number of employees	28,600	28,294	28,409	27,401	a 26,953
Actual horse-power of engines used	1,823	1,787	1,833	1,954	1,802
Approx. value of land and buildings £	4,291,681	4,403,707	4,368,772	4,364,779	4,389,473
Approx. value of plant and machinery £	374,079	376,509	367,923	370,757	337,057
Total amount of wages paid £	3,482,436	3,634,760	3,664,940	3,616,157	3,524,994
Value of fuel used £	58,943	65,638	64,742	65,946	65,100
Value of materials used £	5,407,676	5,562,354	5,456,963	5,121,106	5,092,739
Total value of output £	10,881,684	11,274,588	11,118,283	10,827,374	10,602,374
Value added in process of manufacture £	5,415,065	5,626,596	5,596,578	5,640,322	5,445,035

(a) See § 9.1.

26. Dressmaking and Millinery Establishments.—(i) *Details for each State, 1928-29.* Particulars of dressmaking and millinery establishments are given in the following table :—

DRESSMAKING AND MILLINERY ESTABLISHMENTS, 1928-29.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories ..	225	512	39	57	50	14	897
Number of employees ..	8,884	8,859	678	965	769	123	14,778
Actual horse-power of engines employed ..	183	683	182	63	66	5	1,182
Approximate value of land and buildings ..	£ 875,280	£ 1,370,740	£ 54,925	£ 153,946	£ 103,610	£ 12,462	£ 2,570,963
Approximate value of plant and machinery ..	£ 31,032	£ 116,290	£ 5,558	£ 11,211	£ 9,857	£ 1,203	£ 175,151
Total amount of wages paid during year ..	£ 335,867	£ 968,852	£ 63,374	£ 85,048	£ 70,572	£ 9,021	£ 1,532,734
Value of fuel used ..	£ 4,085	£ 16,387	£ 577	£ 1,864	£ 938	£ 205	£ 24,056
Value of materials used ..	£ 523,622	£ 1,873,637	£ 86,738	£ 107,351	£ 123,540	£ 10,086	£ 2,724,974
Total value of output ..	£ 1,129,054	£ 3,406,295	£ 194,776	£ 234,857	£ 237,771	£ 24,867	£ 5,227,620
Value added in process of manufacture ..	£ 601,347	£ 1,516,271	£ 107,461	£ 125,642	£ 113,293	£ 14,576	£ 2,478,590

(ii) *Development in Australia, 1924-25 to 1928-29.* The development of dressmaking and millinery establishments in Australia during the past four years is shown in the following table :—

**DRESSMAKING AND MILLINERY ESTABLISHMENTS.—AUSTRALIA,
1924-25 TO 1928-29.**

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of factories ..	922	898	912	916	897
Number of employees ..	14,823	14,703	15,051	15,019	a 14,778
Actual horse-power of engines used ..	699	854	906	898	1,182
Approximate value of land and buildings ..	£ 2,270,977	£ 2,308,405	£ 2,498,532	£ 2,598,384	£ 2,570,963
Approximate value of plant and machinery ..	£ 166,102	£ 173,368	£ 171,235	£ 170,653	£ 175,151
Total amount of wages paid ..	£ 1,383,138	£ 1,462,410	£ 1,507,373	£ 1,525,947	£ 1,532,734
Value of fuel used ..	£ 19,042	£ 21,344	£ 22,171	£ 25,054	£ 24,056
Value of materials used ..	£ 2,648,815	£ 2,805,062	£ 2,840,827	£ 2,590,753	£ 2,724,974
Value of final output ..	£ 4,920,650	£ 5,243,483	£ 5,294,399	£ 5,034,713	£ 5,227,620
Value added in process of manufacture ..	£ 2,252,793	£ 2,417,077	£ 2,431,401	£ 2,418,906	£ 2,478,590

(a) See § 9.1.

27. Electrotyping, Stereotyping, Printing, and Binding Works.—(i) *Details for each State, 1928-29.* Printing ranks high in importance among the industries of Australia. It affords employment for about 27,000 employees, and pays more than £6,000,000 in salaries and wages. During 1928-29 the total value of the output amounted to £16,419,674.

The following table gives particulars of these industries in each State for the year 1928-29 :—

**ELECTROTYPING, STEREOTYPING, PRINTING, AND BINDING ESTABLISHMENTS,
1928-29.**

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories ..	501	483	132	97	91	21	1,325
Number of employees ..	10,392	9,136	3,372	1,844	1,541	682	26,967
Actual horse-power of engines employed ..	9,563	7,881	2,553	1,736	1,456	361	23,550
Approximate value of land and buildings ..	£ 3,100,328	£ 2,449,670	£ 821,969	£ 664,100	£ 436,090	£ 111,304	£ 7,583,461
Approximate value of plant and machinery ..	£ 3,132,777	£ 2,111,050	£ 590,336	£ 571,345	£ 375,071	£ 125,944	£ 6,906,523
Total amount of wages paid during year ..	£ 2,446,228	£ 1,959,773	£ 721,975	£ 410,431	£ 359,403	£ 161,493	£ 6,059,303
Value of fuel used ..	£ 80,501	£ 65,061	£ 32,390	£ 14,038	£ 12,868	£ 5,177	£ 210,035
Value of materials used ..	£ 2,647,691	£ 2,200,604	£ 515,610	£ 389,585	£ 300,730	£ 97,810	£ 6,152,030
Total value of output ..	£ 6,863,261	£ 5,548,169	£ 1,724,552	£ 1,078,313	£ 877,718	£ 327,661	£ 10,419,674
Value added in process of manufacture ..	£ 4,135,069	£ 3,282,504	£ 1,176,552	£ 674,640	£ 564,120	£ 224,674	£ 10,057,559

(ii) *Development in Australia, 1924-25 to 1928-29.* The development of electrotyping, stereotyping, printing, and binding in Australia since 1924-25 is shown in the following table :—

**ELECTROTYPING, STEREOTYPING, PRINTING AND BINDING ESTABLISHMENTS.—
AUSTRALIA, 1924-25 TO 1928-29.**

Items.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Number of establishments	1,238	1,254	1,307	1,322	1,325
Number of employees	25,279	25,213	27,059	27,049	<i>a</i> 26,967
Actual horse-power of engines used ..	18,203	19,048	20,581	23,042	23,550
Approximate value of land and buildings £	5,709,421	6,258,485	7,012,899	7,421,436	7,583,461
Approximate value of plant and machinery £	5,624,487	5,961,076	6,562,612	6,507,575	6,906,523
Total amount of wages paid	£ 5,232,040	5,526,681	5,934,778	5,980,513	6,059,303
Value of fuel used	£ 165,046	185,513	197,648	209,647	210,085
Value of materials used	£ 4,904,536	5,277,369	5,969,691	6,079,643	6,152,030
Total value of output	£ 13,621,903	14,493,764	16,000,811	16,307,832	16,419,674
Value added in process of manufacture £	8,552,321	9,030,882	9,833,472	10,118,542	10,057,559

(a) See § 9.1.

The figures shown in the above table for some years were considerably augmented by the inclusion of all details in respect of the newspaper industry, but from 1924-25 onwards only the cost of printing and publishing the papers has been taken into account in computing factory returns.

28. Motor Vehicles and Accessories.—The industries catering for the motor trade comprise the principal branches of manufacture in Class XI. The statistical classification has been amended and does not now permit the separation of the assembling and repairing of motors from the body building section. The number of bodies manufactured during 1928-29 was 72,193, valued at £4,357,841. The returns for the combined industries during the year 1928-29 are as follow :—

MOTOR VEHICLES AND ACCESSORIES, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	945	759	128	146	156	65	2,199
Number of employees	8,457	6,181	1,286	5,495	1,259	498	23,171
Actual horse-power of engines employed ..	5,134	4,530	719	4,159	612	233	15,387
Approximate value of land and buildings ..	3,178,009	2,026,910	502,535	987,777	468,630	172,822	7,337,683
Approximate value of plant and machinery ..	£ 591,454	£ 811,750	£ 93,531	£ 719,972	£ 97,722	£ 24,476	£ 2,338,905
Total amount of wages paid during year ..	£ 1,619,690	£ 1,280,290	£ 232,453	£ 1,138,164	£ 262,032	£ 72,110	£ 4,604,739
Value of fuel used	£ 68,871	£ 55,247	£ 9,099	£ 41,303	£ 8,766	£ 3,264	£ 190,356
Value of materials used	£ 1,300,131	£ 727,373	£ 105,605	£ 1,279,432	£ 134,959	£ 33,369	£ 3,580,869
Total value of output	£ 3,672,553	£ 2,688,382	£ 681,993	£ 3,159,007	£ 580,657	£ 146,970	£ 10,929,562
Value added in process of manufacture	£ 2,303,551	£ 1,905,762	£ 566,389	£ 1,835,369	£ 436,932	£ 110,337	£ 7,158,337

29. Furniture and Cabinet Making and Billiard Table Making Factories.—These industries constitute the principal manufactures in Class XIII. The following table gives particulars for each State :—

FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING FACTORIES, 1928-29.

Items.	N.S.W.	Vic.	Q'land. (b)	S. Aust.	W. Aust. (a)	Tas.	Australia.
Number of factories	271	318	81	56	62	33	821
Number of employees	4,001	2,980	1,240	839	816	337	10,213
Actual horse-power of engines employed	4,927	3,625	1,484	1,819	975	460	13,290
Approximate value of land and buildings	£ 847,090	£ 684,390	£ 186,648	£ 123,150	£ 137,505	£ 41,278	£ 2,000,061
Approximate value of plant and machinery	£ 263,923	£ 184,300	£ 76,293	£ 79,588	£ 46,582	£ 19,584	£ 670,270
Total amount of wages paid during year	£ 854,033	£ 508,513	£ 246,211	£ 149,256	£ 154,394	£ 49,915	£ 1,962,322
Value of fuel used	£ 29,830	£ 20,498	£ 8,445	£ 6,709	£ 4,027	£ 1,790	£ 65,299
Value of materials used	£ 1,269,403	£ 690,200	£ 307,598	£ 182,074	£ 199,882	£ 36,341	£ 2,685,498
Total value of output	£ 2,536,669	£ 1,561,278	£ 667,757	£ 394,661	£ 439,170	£ 115,191	£ 5,714,726
Value added in process of manufacture	£ 1,243,436	£ 850,580	£ 351,714	£ 205,878	£ 235,261	£ 77,060	£ 2,963,929

(a) Excluding Billiard Tables.

(b) Includes Furnishing Drapery.

30. Electric Light and Power Works.—The increased demand for electrical energy has been responsible for considerable development in the electric light and power works of Australia during recent years. Since 1924-25 the production of electric light and power has increased from 1,536,853,348 to 2,286,130,154 British units, or by more than 48 per cent. Particulars for the year 1928-29 are as follow :—

ELECTRIC LIGHT AND POWER WORKS, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	126	87	31	29	47	6	326
Number of employees	2,196	1,153	793	1,343	313	95	5,898
Actual horse-power of engines employed	334,294	235,589	104,601	98,718	50,936	77,440	901,578
Approximate value of land and buildings	£ 2,938,924	£ 1,895,460	£ 295,414	£ 532,399	£ 261,916	£ 28,270	£ 5,952,383
Approximate value of plant and machinery	£ 8,354,178	£ 6,079,300	£ 2,179,684	£ 1,838,358	£ 850,580	£ 3,042,063	£ 22,345,161
Total amount of wages paid during year	£ 676,195	£ 321,163	£ 199,992	£ 353,657	£ 83,658	£ 25,691	£ 1,660,356
Value of fuel used	£ 1,475,223	£ 609,205	£ 163,103	£ 263,247	£ 251,015	£ 1,818	£ 2,763,611
Total value of output	£ 4,956,461	£ 1,616,076	£ 605,143	£ 1,091,220	£ 578,146	£ 258,878	£ 9,105,924

31. Gas and Coke Works.—(i) *Details for each State, 1928-29.* Gas works are in operation in nearly all the chief towns in Australia. In New South Wales there are nine and in Queensland one coke factories which are worked as separate industries. The subjoined table gives particulars of gas and coke works in each State for the year 1928-29 :—

GAS AND COKE WORKS, 1928-29.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of factories	58	36	17	6	5	2	124
Number of employees	2,461	1,075	716	769	112	101	5,234
Actual horse-power of engines employed	7,681	3,638	841	2,357	237	156	14,910
Approximate value of land and buildings	£ 1,156,541	£ 582,150	£ 245,901	£ 40,682	£ 81,446	£ 49,235	£ 2,156,155
Approximate value of plant and machinery	£ 4,014,187	£ 2,039,050	£ 1,414,797	£ 1,205,057	£ 163,617	£ 167,610	£ 9,054,318
Total amount of wages paid during year	£ 639,452	£ 300,999	£ 181,488	£ 211,790	£ 29,143	£ 25,995	£ 1,399,227
Value of fuel used	£ 332,380	£ 191,829	£ 18,016	£ 43,783	£ 11,575	£ 4,704	£ 602,239
Value of materials used	£ 2,307,003	£ 1,353,127	£ 171,255	£ 274,452	£ 61,709	£ 33,864	£ 4,201,410
Total value of output	£ 4,684,771	£ 2,576,832	£ 619,943	£ 728,612	£ 163,255	£ 91,356	£ 8,664,774
Value added in process of manufacture	£ 2,045,388	£ 1,031,876	£ 430,677	£ 410,425	£ 89,971	£ 52,788	£ 4,061,125

(ii) *Coal Used and Production, 1928-29.* The following table shows the quantity and value of the production of gas and coke works in each State during the year 1928-29 :—

GAS AND COKE WORKS.—COAL USED AND PRODUCTION, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
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COAL USED.

Coal	tons	1,531,135	437,651	a 98,863	106,184	20,282	13,953	2,208,069
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PRODUCTS.

Gas	..	1,000 cubic feet	10,683,530	6,424,614	1,388,737	1,562,431	361,561	198,642	20,618,915
Coke	..	.. tons	1,003,626	279,887	55,937	63,101	11,396	5,554	1,419,501

VALUE.

Gas	..	..	£	2,139,694	1,444,204	560,277	547,259	137,179	72,726	4,901,339
Coke	..	..	£	1,441,321	438,288	41,863	113,304	17,745	14,749	2,067,270

(a) Relates to Gas Works only.

In order to cope with the general industrial expansion, the production of gas increased from 18,377,039 cubic feet in 1924-25 to 20,618,915 cubic feet in 1928-29, while the output of coke decreased from 1,462,021 to 1,419,501 tons during the same period.

CHAPTER XXIII.

WATER CONSERVATION AND IRRIGATION.

§ 1. Artesian Water.

1. **General.**—In every country in which droughts are recurrent, there are few problems the solution of which is of greater importance than that of an adequate system of water conservation. Much has been done in Australia so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water-works will be found in the chapter dealing with Local Government. Interstate Conferences on artesian water were held in 1912, 1914, 1921, 1924, and 1928, when combined Governmental action was agreed upon with reference to delimitation of the artesian basins, hydrographic surveys, reason for decrease in flow, analyses and utilization of artesian water, etc. (See map on page 649.)

2. **The Great Australian Artesian Basin.**—In speaking of the "Great Australian Artesian Basin," the area is understood which includes (a) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (b) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (c) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shown approximately by the map on page 649) is said to be the largest yet discovered, and measures about 600,000 square miles, of which 376,000 square miles are in Queensland, 118,000 square miles in South Australia, 80,000 square miles in New South Wales, and 25,000 square miles in the Northern Territory. The area of the intake beds is estimated at 60,010 square miles, viz., 50,000 square miles in Queensland and 10,010 square miles in New South Wales. A description of the basin and its geological formation will be found in previous issues of the Year Book (see No. 6, p. 569).

3. **The Western Australian Basins.**—The Western Australian Basins fall naturally within five distinct groups, viz., the Eucla Basin, in the extreme south-east of the State, extending well into South Australia along the shores of the Great Australian Bight; the Coastal Plain Basin, west of the Darling Range; the North-West Basin, between the Murchison and Ashburton Rivers; the Gulf Basin, between Cambridge Gulf and Queen's Channel; and the Desert Basin, between the De Grey and Fitzroy Rivers.

The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the Great Australian Bight, form the Eucla artesian water area. Where boring operations have been undertaken, the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which, so far, have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the Coastal Plain Basin to the west of the Darling Ranges artesian boring has, on the other hand, been carried on successfully for many years.

4. **The Murray River Basin.**—The Murray River basin extends over south-western New South Wales, north-western Victoria, and south-eastern South Australia. It is bounded on the west by the azoic and palaeozoic rocks of the Mount Lofty and other ranges extending northwards from near the mouth of the Murray to the Barrier Range, and on the east and north-east by the ranges of Victoria and New South Wales. This tertiary water-basin is occupied by a succession of sedimentary formations, both porous and impervious. It is of interest to note that the waters of the Murray River are partly

supplied by influx from the water-bearing beds of this basin; this is proved by the fact that, at low water, springs are observed at certain places flowing into it from beneath the limestone cliffs from Pyap Bend downwards. Similar springs exist along the courses of other branches of the River Murray system, where they cut through the tertiary formation. On the Victorian side bores have been put down, and water has been struck at various levels.

5. **Plutonic or Meteoric Waters.**—In previous Year Books will be found a statement of the theory of Professor Gregory* as to the origin of the water in the Australian artesian basins, together with the objections held thereto by a former Government Geologist of New South Wales † (See Official Year Book No. 6, p. 570).

6. **Artesian and Sub-Artesian Bores.**—(i) *General.* The following table gives particulars of artesian and sub-artesian bores in each State and in the Northern Territory:—

ARTESIAN AND SUB-ARTESIAN BORES, 1928-29.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust. (c)	W. Aust.	N. Ter.	Total.
Bores existing .. No.	560	380	13,247	155	242	191	4,775
Total depth of existing bores .. feet	923,764	101,200	4,119,350	114,727	223,389	62,375	5,544,805
Daily flow .. 1,000 gals.	477,043	(b)	4304,812	412,971	70,112	7,723	4472,661
Depth at which artesian water was struck—							
Maximum .. feet	4,338	800	7,009	4,850	3,325	1,760	7,009
Minimum .. feet	89	150	10	55	39	42	10
Temperature of flow—							
Maximum .. °Fahr.	139	(b)	212	268	140	(b)	212
Minimum .. °Fahr.	68	(b)	78	82	75	(b)	68

(a) Flowing bores only. (b) Not available. (c) Government bores only. (d) Total depth of all bores. (e) Incomplete. (f) Not including 1,440 bores in course of construction, abandoned, or uncertain.

7. **Details for States.**—Considerations of space preclude the insertion of separate particulars of operations in the States during the year 1928-29. Details for earlier years will, however, be found in previous issues of the Official Year Book.

§ 2. Irrigation.

1. **General.**—Australia's first experiments in irrigation were made with the object of bringing under cultivation areas in which an inadequate rainfall rendered agricultural and even pastoral occupations precarious and intermittent, and, although these original settlements have generally proved fairly successful, most of the States, instead of promoting new settlement in unoccupied regions, are adopting the policy of making existing settlements closer, by repurchasing large estates, subdividing them into holdings of suitable sizes for cultivation, and selling the land upon easy terms of payment. It is in connexion with this Closer Settlement policy that the special value of irrigation is recognized.

2. **New South Wales.**—(i) *General.* The recognition of the fact that the area suitable for cultivation might be extended largely by a system of water conservation and irrigation has induced the Government to undertake various detached works and schemes, which will constitute portion of the system necessary to serve the whole State.

* See J. W. Gregory, F.R.S., D.Sc.: "The Dead Heart of Australia," London, John Murray, 1906; and "The Flowing Wells of Central Australia," Geogr. Journ., July and August, 1911.

† E. F. Pittman, A.R.S.M., formerly Government Geologist of New South Wales: "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory." (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907); "The Great Australian Artesian Basin," Sydney, 1914; and "The Composition and Porosity of the Intake Beds of the Great Australian Artesian Basin," Sydney, 1915.

The system, and the works necessary to its maintenance and development within the State of New South Wales, are under the control of the Water Conservation and Irrigation Commission, which consists of the Minister for Agriculture for the time being as Chairman, and two other Commissioners. The works controlled by the Commission include the great Murrumbidgee Irrigation Scheme; the smaller irrigation settlements at Hay, Curlwaa (Wentworth) and Coomealla; national works of water conservation; shallow boring for settlers; and water trusts and artesian bore trusts operating under the Water Act of 1912. The Commission has control also of storage and diversions of water by private persons for purposes of conservation and irrigation.

(ii) *Murrumbidgee Irrigation Scheme.* The main features of the scheme include a storage dam across the Murrumbidgee at Burrinjuck to retain the river flow, which is released for use lower down the river particularly during the dry summer months; a movable diversion weir at Berembé, about 240 miles below the dam, to turn the required amount of water from the river into the main canal; a main canal, leaving the river near the weir; four main branch canals and a series of subsidiary canals and distributing channels through the area to be irrigated; bridges, checks, regulators and other structures throughout the entire system, and meters for measuring the volume allowed to each farm. Towns and villages, roadways to serve each farm, and a general surface drainage system, are also included in this scheme.

Further details in respect of the storage dam, diversion weir and canals, together with the areas thrown open for settlement are contained in previous issues of the Official Year Book. (See Official Year Book No. 15, page 442).

Particulars in respect of tenure are set out in Chapter V., Land Tenure and Settlement.

The irrigation area is situated on the northern side of the Murrumbidgee River, where it is anticipated that there will ultimately be upwards of 200,000 acres under irrigation in blocks devoted to fruit, vegetable and rice growing, dairying, stock raising, etc. With the aid of irrigation, the soil and climate of these areas are suitable for the production of apricots, peaches, nectarines, prunes, pears, plums, almonds, melons, cantaloups, and citrus fruits, also wine and table grapes, raisins, sultanas, figs, olives, and most varieties of vegetable and fodder crops. Dairying and pig-raising are being undertaken by a large number of settlers in the areas, and the canning and drying of fruit and the production of wine are industries of considerable dimensions. The district is one of the greatest fresh fruit producing centres in the State. The growing of rice on this area is an important industry. Rice from an area of about 14,000 acres was harvested in 1929, the resultant crop being approximately 24,000 tons, which is sufficient for the whole of the requirements of the Commonwealth. Approximately 19,000 acres will be sown to rice for the 1929-30 season giving an estimated yield of 30,000 tons of paddy rice.

On the 30th June, 1929, 1,814 farms were held under permanent tenure, representing a total area of 120,860 acres. In addition, there were 91 farms comprising a total area of approximately 38,834 acres occupied under permissive occupancy pending the granting of permanent titles. The number of town blocks held was 932.

In the matter of cultivation, the following particulars indicate the extent of the work performed by the settlers:—There are approximately 7,612 acres under deciduous fruits, 5,355 under citrus fruits, 5,666 under vines, and for the 1930 harvest about 19,000 acres under rice. The estimated population of the area is about 15,000.

The total production of the Murrumbidgee Irrigation areas for the year ended 30th June, 1929, is valued at £970,000.

(iii) *Curlwaa Irrigation Area.* The Curlwaa irrigation area is situated on the Murray River near its junction with the Darling River, and comprises 10,550 acres, of which on 30th June, 1929, irrigable holdings consisting of 2,161 acres had been taken up in areas of 1½ to 40 acres, with a leasehold tenure of 30 years, at rentals of from 3s. to 10s. per

acre per annum for the most part, and up to 35s. per acre in some blocks set apart during recent years. Of the balance, 7,011 acres were leased as non-irrigable holdings for short terms, in the majority of cases up to five years, with rentals of from 5d. to 5s. per acre, while the remainder of the area, with the exception of a few vacant holdings, is made up of roads, channels, and other reserves. Of the irrigable area, 1,296 acres are planted as orchards and vineyards, of which 1,163 acres are in full bearing. There is also a small area under lucerne. It has been proved that the Curlwaa soil is eminently suited to the growth of citrus and other kinds of fruit, and some of the finest oranges grown in New South Wales are produced on this area.

The estimated weight of dried fruits produced on the Curlwaa area in the year 1928-29 was 908 tons, while the production of citrus fruit was 22,684 cases. The total value of production for the year is estimated approximately as follows:—Dried fruits, £50,974; citrus fruits, £15,311; other fresh fruit, £677; other produce and live stock, etc., £5,000; a total of £71,962. The production of citrus was considerably below normal, the crop having been seriously affected by the severe frost of the latter part of the year 1927.

Water is pumped from the Murray River by a suction gas plant in 3 units, with a total capacity of 11,000 gallons per minute and a lift of about 36 feet, and is supplied to the lessees at a flat rate of 20s. per acre per annum. There is also a general rate of 14s. per acre per annum upon the portion of the irrigated area in productive bearing. During the season 1928-29 the quantity of water supplied was 274,471,560 cubic feet, or 6,301 acre-feet, the average area watered during six irrigations being 1,700 acres. Each lessee is entitled to receive a quantity of water equivalent to a depth of 30 inches per annum.

(iv) *Hay Irrigation Area.* The Hay irrigation area consists of about 4,500 acres, of which on 30th June, 1929, the area held and used for irrigation purposes was 1,027 acres, in 107 blocks of from 3 to 30 acres. The term of lease is generally 30 years, and the annual rental from 5s. to 12s. per acre. In addition, there was at that date an area of 2,886 acres of non-irrigated land taken up in 53 blocks for short terms up to five years, with rentals of from 1s. to 10s. per acre. Water is lifted from the Murrumbidgee River by suction gas-driven pumping machinery in 2 units, with a total capacity of 4,000 gallons per minute, and a maximum lift of 30 feet. The rate charged to settlers is £1 10s. per acre per annum, but no general rate is levied as at Curlwaa. During the 1928-29 season 167,009,040 cubic feet of water or 3,834 acre feet, were pumped with eight pumpings. The average area watered was 1,059 acres. This includes lands outside the area which are watered by a special agreement. The principal industry is dairying, milk being supplied to the town of Hay, and cream to the local butter factory.

(v) *Coomoalla Irrigation Area.* The Coomoalla Irrigation Area is situated on the Murray River about 9 miles by road from Wentworth. The land is rich chocolate loam, timbered with pine, belah, and sandalwood, and has a limestone subsoil varying from 2 feet to 10 feet below the surface. The soil is admirably suited to horticultural farming, especially viticulture. The first section at present being developed embraces 3,090 acres, of which 2,317 acres have been subdivided into 42 residential holdings and 116 horticultural farms, the average area of the latter being 19.1 acres, of which 17.3 acres are irrigable. The tenure is either perpetual leasehold or farm purchase, with a payment period of 36½ years, at the option of the settler. Water is pumped from the Murray River by steam-driven engines, operating two-stage centrifugal pumps, in duplicate, with a total capacity of 38 cubic feet per second. The rising main is of steel, 2,150 feet long, 5 ft. 6 in. diameter, and is of sufficient capacity to permit of an extension of the area later. The supply channels have been lined throughout with concrete and mortar, and the scheme also includes the construction of drainage channels, bridges, and other structures.

Settlement commenced, with the exception of one farm, about the middle of 1926. At 30th June, 1929, 109 holdings were held as leases or purchases, 97 being horticultural and 12 residential holdings. The total area of these is 1,830 acres, of which 1,296 acres had been planted, principally to sultanias and citrus.

The total value of production for the year was approximately £17,000.

During the year 1928-29 the quantity of water supplied was 204,862,680 cubic feet or 4,703 acre-feet, the average area watered during four irrigations being 1,393 acres.

(vi) *Projected Irrigation Schemes.* (a) *General.* Construction is in progress of the Hume Dam, on the Murray River, and of Wyangala Dam on the Lachlan River. The Water Conservation and Irrigation Commission is investigating schemes for utilizing the New South Wales share of the Murray waters, and has under consideration schemes for storing water for the purpose of irrigation and stock and domestic supply on the Macquarie, Hunter, Namoi and Peel Rivers.

(b) *Murray River.* The effect of constructing the Upper Murray storage will be to ensure at all times sufficient flow below Albury to permit of diversions for irrigation and stock and domestic supplies, and to make good the losses in the river due to seepage, evaporation, and lockages. The Act provides that, subject to certain conditions, New South Wales and Victoria shall share the regulated flow of the river at Albury, and shall each have the full use of all tributaries of the River Murray within its territory below Albury, with the right to divert, store, and use the flows thereof.

It is estimated that the New South Wales regulated river flow after the construction of the Upper Murray storage will amount to an average of at least 132,500 acre-feet per month at Albury during the irrigating season, and this will permit of a considerable amount of irrigation development along the river.

Construction has advanced to such a stage that 100,000 acre-feet can be stored behind the Hume Reservoir wall, and investigations are being made into the manner in which the New South Wales proportion of the Murray waters can be most profitably used, when the full storage is available.

(c) *Lachlan River.* In December, 1926, the Parliamentary Standing Committee on Public Works completed its inquiry into alternative schemes for water conservation on the Lachlan River. These comprised:—(1) construction of a large storage dam at Wyangala; (2) the raising of Lake Cudgellico; and (3) a number of low weirs between Goolagong and Booligal. The Committee recommended the construction of the Wyangala Dam, subject to some 850,000 acres of mallee country along the Condobolin-Broken Hill railway line between Euabalong and Roto being thrown open for settlement. It is proposed to serve this area with stock and domestic water, which will be diverted from the Lachlan River at the Booberoi Weir and conveyed in channels to the area. The Wyangala Dam Act 1928, assented to on 16th June, 1928, provided for the construction of a concrete dam across the Lachlan River about 6 miles below the junction of the Abercrombie River, at an estimated cost of £1,352,000. The Water Conservation and Irrigation Commission of New South Wales, was constituted the constructing authority for the work. After an exhaustive inquiry by the Development and Migration Commission, sanction was given for the funds for construction being provided under the terms of the £34,000,000 Migration Agreement. The excavation of the foundations of the dam was commenced on 17th December, 1928. The catchment area above the dam is 3,200 square miles. The formation at site is a hard grey granite which has been extensively explored with the diamond drill and constitutes a satisfactory foundation. The capacity of the storage will be about 300,000 acre-feet, and the maximum depth 165 feet. Arrangements are being completed for the whole of the preliminary works, and much of the necessary machinery has been ordered or arranged for. The expenditure to the 30th June, 1929, was £124,979.

(d) *Macquarie River.* The question of construction of a storage dam at Burrendong, together with a diversion weir in the vicinity of Narromine, and a canal therefrom to serve an irrigation area between Narromine and Trangie was also inquired into by the Parliamentary Standing Committee on Public Works, but the inquiry was not completed at the expiration of Parliament, and is remaining in abeyance for the present.

(e) *Hunter, Namoi, and Peel Rivers.* Pumping by licensed private irrigators under the Water Act of 1912 is increasing at such a rapid rate that in the case of some of the rivers, such as the Peel and the Hunter, it will not be possible adequately to supply the

pumps in dry seasons until head storage works have been constructed. Investigations are in progress for storage dams on the Hunter and Peel Rivers, for dams at alternative sites on the Namoi River at Keepit and above Manilla.

(vii) *Water Rights.* By Part II. of the Water Act 1912, the right to the use and flow and to the control of the water in all rivers and lakes which flow through, or past, or are situate within the land of two or more occupiers is vested in the Crown. Private rights are almost wholly abolished, riparian law is simplified, and a system of licences is established for the protection of private works of water conservation, irrigation, water supply, drainage, and the prevention of inundation of land. The enactment prevents litigation and determines the rights of riparian occupiers.

During the year ending 30th June, 1929, applications were received under the Water Act 1912 for 213 new licences and 265 for renewals of existing licences for pumps, dams, and other works. The new licences issued were 176 in number, while 38 were not renewed, so that on the 30th June, 1929, there were 2,339 in force. In most instances the period for which these licences are issued is five years. A fee covering the whole of the period of each licence is charged to cover the cost of administration.

(viii) *Water, Irrigation and Bore Trusts.* Part III. of the Water Act 1912 provides for the supply of water either for irrigation, stock, or domestic purposes, and for drainage of land. The liabilities thereon are repaid to the Crown, with interest spread over a period of usually from 10 to 28 years inclusive. Under the law the administration, except for the Western Division, is vested in trustees—either three or five to each trust, of whom, in the former case, one is the official trustee representing the Government, and in the latter two are official trustees acting in a similar capacity. In the Western Division the Western Land Board is appointed trustee. For the supply of water, trusts have been constituted in connexion with (a) 77 Bore Water Trusts; (b) seven schemes for the improvement of natural off-takes of effluent channels, for the purpose of diverting supplies from the main rivers; (c) in 6 instances for the construction of weirs across stream channels; (d) 10 pumping schemes; and (e) one for impounding by means of regulators water which flows into natural lakes. The area included within these trusts amounts to :—Bore Water Trusts 4,607,177 acres, and Water Trusts and Irrigation Trusts 3,557,135 acres.

In addition to the Trust Districts, there are 12 Artesian Wells Districts totalling 324,947 acres supplied with water under the provisions of Part V. of the Water Act 1912.

(ix) *Amendment of the Water Act 1912.* A measure is in preparation for submission to the State Legislature to amend and improve the existing enactments relating to the control of water in the streams of the State. The measure will simplify the procedure in respect of the issue of licences to appropriate water and to use works connected with rivers and lakes and will give effect to the practice of prior appropriation of water according to the order in which applications for licences and authorities are received. This measure will also provide for the licensing of bores sunk for water for depths greater than 100 feet and will contain provisions to enable supplies of water being given to extensive districts for domestic use, stock watering and irrigation.

3. *Victoria.*—(i) *General.* The Water Conservation Works in Victoria consist of irrigation works proper, and those providing mainly a domestic supply, such as the works for the supply of Melbourne, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Wonthaggi, Broken River, Kerang Lakes, Naval Base and Mornington Peninsula, and Mallee Supply Works administered by the State Rivers and Water Supply Commission; and other works of domestic supply controlled by Water Works Trusts or Municipal Corporations. Particulars of the works not controlled by the Commission will be found in the chapter on Local Government in this volume. With the exception of that of the First Mildura Irrigation Trust, all the irrigation schemes, and the more important domestic and stock water-supply works in rural districts, are vested in and controlled by the State Rivers and Water Supply Commission, a body composed of three members, which was created by the Water Act 1905, now incorporated in the Water Act 1928.

While not covering the whole of the activities of the State Rivers and Water Supply Commission, the particulars in the following statement will furnish a general idea of the development of water conservation and distribution in Victoria under its administration; also of the value of an efficient water supply to country lands, whether for domestic and stock purposes only, or for the addition of irrigation to lands already so supplied:—

Irrigation Districts—	At 30.6.07—	At 30.6.29—
Number of Districts administered ..	10	33
Number of Districts having Water Rights	Nil	25
Total of such Water Rights	Nil	398,000 acre-feet
Area under Irrigated Culture ..	108,000 acres ..	472,000 acres
Valuation for Rating purposes ..	£196,000 ..	£763,000
Rural Waterworks Districts—		
Number of Districts administered (excluding Coliban)	3	30
Valuation for Rating purposes ..	£125,000 ..	£1,729,000
Urban Districts—		
Number of Districts administered ..	1	68
Valuation for Rating purposes ..	£5,600 ..	£523,000

The storages for irrigation and domestic and stock supply purposes had, at 30th June, 1929, a total capacity of 1,267,520 acre-feet. The completion of works now under construction will bring the total to 1,350,920 acre-feet, as against a total of 172,000 acre-feet in 1902. The Hume Reservoir, which is being constructed on the Upper Murray, already stores 100,000 acre-feet, and, when completed, will contain 2,000,000 acre-feet, half of which quantities under the provisions of the River Murray Agreement, can be credited to the State of Victoria. At the latest available date the capacity of existing storages amounted to 1,267,520 acre-feet, while when works in course of construction have been completed the total will amount to 2,300,920 acre-feet.

(ii) *Irrigation Schemes.* (a) *General.* This division comprises the schemes constructed and under construction for the supply of water to thirty-three irrigation districts. The capital expenditure at 30th June, 1929, on water supply for the irrigation and water supply districts under the control of the Commission and at Mildura, exclusive of the amount of £2,063,000 expended by it on River Murray Agreement Works, was £10,938,000. The irrigation works draw their supplies mainly from headworks constructed on the Goulburn, Murray, and Loddon Rivers. The cost of these headworks, which now stands at £1,127,000, is not debited to any particular districts, but is borne by the State. The extent of land under irrigated culture during the year 1928–29 for all kinds of crop was 471,695 acres.

(b) *Goulburn Irrigation System.* The Goulburn Irrigation System (see Official Year Book No. 13, map on page 561) is the largest project of the kind in Victoria. The need for irrigation in the Goulburn Valley is indicated by its low annual rainfall, 18 inches, while the great variation in the rainfall over the catchment area, 20 inches to 52 inches; in the rate of flow, 180 cusecs* to 80,000 cusecs; and in the volume of the annual river discharge, 620,000 acre-feet to 6,200,000 acre-feet, reveal clearly the necessity for regulating the river flow by storage. The progress made in this direction is shown by the fact that the existing storages of this system will hold some 660,000 acre-feet, which, added to 300,000 acre-feet divertible direct from the river, brings the total artificial supply to 960,000 acre-feet.

The Goulburn Scheme comprises a diversion weir on the Goulburn River, near Nagambie, which raises the summer level of the river about 45 feet to 408 feet above sea level, the height necessary to command the lands to be irrigated; two main channels,

* Cusecs — Cubic feet per second.

the eastern diverting water to the four Irrigation Districts surrounding the town of Shepparton, and the western supplying the eastern half of the Rodney main channels and filling Waranga Basin, the principal storage reservoir of the scheme. Two further main channels issue from this reservoir, one feeding the western half of the Rodney main channels, and the other serving districts as far west as Boort and continuing thence further west to the Yarriambiack Creek, distant 230 miles by channel from Waranga Reservoir. Further details in respect of this scheme are contained in previous issues of the Year Book (see Official Year Book, No. 19, page 834).

In response to requests for additional storage the Commission adopted what was known as the Sugarloaf site, just below the junction of the Goulburn and Delatite Rivers, as the most economical. A dam has been constructed to a height of 140 feet above the river bed, its foundation being in places 75 feet below the natural surface. It has an over-all length of 3,000 feet, of which 2,300 feet consist of "rock fill" bank with a reinforced concrete-core wall, the remaining 700 feet being of mass concrete, and forming a flood spillway. The dam submerges an area of 8,000 acres and permits the storage of 306,000 acre-feet of water. The catchment area above this (Eildon) reservoir is 1,500 square miles.

The State Electricity Commission has proceeded with its scheme of hydro-electric works at the Eildon Reservoir, in connexion with which the Water Commission provided a separate outlet for emergency or power purposes. Generally, the regulated flow from the reservoir required for water supply purposes can be discharged through this pipe, thus enabling it, in the whole or part, to be passed through the turbines on its way to the river.

The portion of the State at present served by the Goulburn system comprises 137,200 acres east of the river, 573,500 acres between the Goulburn and the Campaspe, 400,430 acres between the Campaspe and the Loddon, and 69,670 acres west of the Loddon. These areas include the irrigated closer settlements at Katandra, Shepparton, Stanhope, Tongala, Rochester, Echuca North, and Dingee, as well as the districts formerly controlled by the Rodney and Tragowel Plains Trusts, where the holdings are larger than in closer settlement areas. The main channels of the system have an aggregate length of 202 miles, in addition to which there are 2,540 miles of distributaries, a total for the whole system of 2,742 miles.

The balance of the area, including Deakin and Boort Districts, is provided with a domestic and stock supply, and water is sold for occasional irrigation on application. The amount of the compulsory charge for irrigation water allotted as a "right" in the older districts is at present 7s. per acre-foot in the two districts—Tragowel Plains and Dingee—farthest removed from the sources of supply, 7s. 6d. in special circumstances at Echuca North, and 6s. per acre-foot elsewhere.

The East Goulburn main channel, with a capacity of 666 acre-feet per day and a length of 32 miles to the Broken River, has supplied the Shepparton Irrigation District of about 25,000 acres—mainly Closer Settlement areas—since its inception in 1912, and is now being enlarged to 1,100 acre-feet per day, and extended to a total length of 51 miles to supply also the Irrigation Districts of South Shepparton (34,000 acres), North Shepparton (64,400 acres), and Katandra (14,000 acres). The North Shepparton District will be gradually extended as required to include additional areas served by further distributary channels completed from time to time, until the whole of the suitable area, bounded by the East Goulburn main channel on the east, the Goulburn River on the west, and the Nine-Mile Creek on the north, has been supplied. In the South Shepparton district water rights of 1 acre-foot of water to each 4 acres of irrigable land have been allotted, the compulsory charge owing to the greater cost of construction being, for the present, 8s. per acre-foot. The Waranga Western main channel (capacity 2,000 acre-feet per day at reservoir outlet) has been enlarged from 520 to over 800 acre-feet per day from the Piccaninny Creek to a point about $1\frac{1}{2}$ miles westward. From this point a new channel—the Tandarra-Calivil main—has been constructed through Dingee District (6,000 acres) and an adjoining area known as Calivil to the No. 1 main of Tragowel Plains District. This new channel came into use in September, 1926, and has since relieved the pressure on the Tragowel Plains system, which supplies an area of

212,750 acres, and released most of the capacity of the Waranga Western main channel for the delivery of supplies to the Calivil District (45,700 acres), and to supplement the supply to Boort District, previously dependent mainly on the Loddon River. This channel has been extended westward, with a view to improving the water supply conditions of the Wimmera-Mallee districts referred to later.

The development of the fruit-canning industry emphasizes the success of irrigation in the Goulburn Valley. The canneries at Shepparton and Kyabram, together with the recently established one at Mooroopna, processed during the 1928 season the largest pack of canned fruit yet produced in Victoria, the aggregate of the three canneries being 20,000,000 tins. It is estimated that about 40 million tins of canned fruit are produced yearly in Australia, of which 60 per cent. is processed by Co-operative Canners in Irrigation Districts.

(c) *River Murray Irrigation Schemes.* The group of irrigation schemes for the service of the districts along the frontage of the River Murray, and drawing supplies direct from that river, ranks next in importance in point of development to the Goulburn Irrigation System. These schemes already supply an area of 430,000 acres, served by 1,700 miles of channels, and are capable of considerable expansion when the Hume Storage Reservoir, now under construction, becomes operative.

The districts supplied are all situated in the portion of the "Murray Valley below" the town of Echuca, and in an area of comparatively low rainfall. Those between Echuca and Swan Hill, excepting Tresco, are supplied by gravitation, while the Tresco district, and those lower down the river—Nyah, Merbein, Mildura and Red Cliffs—are supplied by pumping.

The present headwork of the gravitation schemes is a weir and lock at Torrumbarry—some 20 miles (by road) down-stream from Echuca—constructed under the powers conferred by the River Murray Waters Acts, the constructing authority being the State Rivers and Water Supply Commission.

This weir was commenced early in 1919 and completed in the latter part of 1923. It raises the summer level of the river by some 16 feet, and thus substitutes continuous diversion for the intermittent diversion hitherto dependent on the varying level in the river, and at the same time provides for the passing of river craft but without offering serious obstruction to the passage of floods.

These objects have been achieved by the construction of a concrete foundation, combined with movable steel trestles, which support stop bars to the height necessary to keep the river at diverting level. In times of flood the bars, and if necessary the trestles themselves, are removed to the river bank.

The effect of this work, as regards irrigation, is the ensuring of a regular supply by gravitation throughout the year to the districts between Torrumbarry and Swan Hill. The districts first benefited by this supply are those known as Leitchville, Cohuna, Gannawarra, Koondrook and Swan Hill, comprising in all 199,000 acres on the river frontage (hitherto dependent on pumping plants during low stages of river flow), and the Kerang and Mystic Park districts and adjacent areas, containing about 113,000 acres, more distant from the river which were receiving a more or less irregular supply, by gravitation, from the Kow Swamp Free Headworks. These headworks comprise a gravitation offtake at the effluence from the Murray of the Gunbower Creek; a main channel thence (the Gunbower Creek improved) to Kow Swamp Reservoir, a natural depression improved so as to hold 40,860 acre-feet; and a main supply channel therefrom (the Macorna channel) westward to the Loddon River.

The quantity of water allotted as a "right" in these districts is 1 acre-foot per irrigable acre. The compulsory charge is at present 6s. per acre-foot of such water rights. In Kerang district—not yet under a compulsory irrigation charge—water is sold to irrigators on application at a charge not exceeding 4s. per acre-foot of water supplied. The districts supplied include the Cohuna, Koondrook, and Swan Hill Closer Settlement Estates, comprising in all 34,000 acres. Of this area, 8,000 acres were specially purchased for soldier settlement, the channel systems being correspondingly extended.

In addition to stabilising the supplies to existing irrigation districts, the Torrumbarry weir will enable large areas adjacent to these districts to be commanded by extensions of existing gravitation channel systems. The most important works so far constructed for this purpose are (a) the Gunbower-Cohuna Main Channel, which with the necessary distributaries provides water for irrigation for the new Leitchville Irrigation District of 10,000 acres situate between Kow Swamp State Works and the Cohuna Irrigation District; (b) the distributary channels of the Mystic Park area (18,000 acres); (c) the main channel and distributaries for the Third Lake Irrigation District (12,100 acres); and (d) the distributary channels for the Fish Point Irrigation District (5,800 acres) adjoining the Little Murray River. The water rights allotted are—in Mystic Park 1 acre-foot, Third Lake 2 acre-feet to every 3 acres of irrigable land, and in Fish Point area 1 acre-foot to every 2 acres of irrigable land. The compulsory charge is at present 6s. per acre-foot in Mystic Park District, 7s. per acre-foot in Leitchville and Third Lake Districts, and 8s. per acre-foot at Fish Point.

Extensions of irrigation schemes dependent on the River Murray, hitherto impracticable owing to lack of storage on that river, will be rendered possible on the completion of the Hume Reservoir. This storage work, now in course of construction jointly by the States of New South Wales and Victoria, is one of the works authorized by the River Murray Waters Acts. (Detailed reference to this undertaking will be found at the end of this section.) The site of the dam is a little below the junction of the Murray and Mitta Rivers. The catchment area is about 6,000 square miles of mountainous country. A reservoir of a capacity of 2,000,000 acre-feet would submerge some 69 square miles—about four times the area of Sydney Harbour.

The irrigation areas supplied by means of pumping, and not commandable by gravitation from the Torrumbarry offtake, stated in geographical order, are the Tresco Irrigation District, the Nyah and Merbein Murray Frontage Settlements, the First Mildura Irrigation Trust District, and the Red Cliffs Soldier Settlement.

The Tresco District of 4,000 acres, created by private enterprise, and later taken over by the State Rivers and Water Supply Commission, is supplied by water lifted from Lake Boga by pumps throwing 80 acre-feet per day. Its channel mileage is 50. The water supplied is $2\frac{1}{2}$ acre-feet to each irrigable acre, and the compulsory charge at present £2 per acre.

The Nyah Irrigation Area is supplied with water diverted from the Murray by a high-lift pumping plant—capacity, 94 acre-feet per day. The total length of the channels is 53 miles, of which 44 miles are lined with concrete. The settlement contains 3,800 acres, subdivided into 236 holdings of an average area of 15 acres—practically all settled. The settlers include 64 discharged soldiers. Water rights are apportioned to these holdings on the basis of $2\frac{1}{2}$ acre-feet of water for each irrigable acre, and the compulsory charge is at present 20s. per acre-foot of such water rights. The land is devoted mainly to vineyards and orchards, and the settlers, taken as a whole, are making good progress. The value of irrigation to the district is reflected in the selling price of the land, fully planted blocks bringing remarkably high prices.

The Merbein Irrigation Area comprises 8,400 acres, originally Crown lands. This settlement now contains 418 holdings, averaging 20 acres each, practically all settled, the settlers including 158 discharged soldiers. The water is obtained from the Murray by pumps, which deliver 225 acre-feet per day. The main and distributary channels have a combined length of 60 miles. The land settlement conditions and the water rights apportioned are the same as at Nyah, but the compulsory charge is 24s. per acre-foot. The Merbein Works supply also the adjacent Yelta Waterworks District of 48,500 acres.

The Red Cliffs Irrigation Settlement comprises an area of 18,000 acres including the township and 15,000 acres of first class irrigable land adjoining the Mildura Settlement. It is the irrigable portion of the large Red Cliffs estate of 33,000 acres, known as the Debenture Holders' Land, acquired by the State for soldier settlement. The scheme of works for this district ranks first in importance among Victoria's pumping systems. It includes a pumping plant capable of delivering 500 acre-feet of water

per day, lifted 105 feet, a reinforced concrete rising main 6 feet 6 inches in diameter, 34 chains long, two electric generators each of about 350 k.v.a. capacity, to provide for reliefs, and a system of main and distributary channels to command every holding in the district. The three pumping units have already been installed and are in operation. The total length of channels constructed to date is 124 miles, the excavation involved totalling 665,000 cubic yards. Channels having a length of 114 miles have been lined with concrete, with the result that 99 per cent. of the blocks in the settlement are protected from seepage. About 680 discharged soldiers have been allotted blocks on this settlement. The Red Cliffs township, which is growing rapidly, has been proclaimed an urban division of the Irrigation District, and is supplied with the necessary reticulation from a concrete stand pipe 70 feet high and 26 feet in diameter. The Red Cliffs works supply also the adjacent Carwarp and Carwarp Central Waterworks Districts having a total area of 206,000 acres.

The area planted to date consists of 10,100 acres of vines and citrus trees. The first harvest (1924) returned 570 tons of dried fruit, in addition to which large quantities of table grapes were sold for consumption. The 1929 harvest produced 17,000 tons of raisins, currants, and sultanas, in addition to large quantities of grapes sold for dessert and distillation.

(d) *Loddon River Scheme.* This also is wholly a gravitation system, with a regulating weir on the Loddon at Laanecoorie as its headwork. Its storage capacity is 14,000 acre-feet, and other works include timber diversion weirs at Serpentine and Kinypanial, and 243 miles of channels which supply an area of 79,000 acres in the Boort district for domestic and stock purposes and partial irrigation, and a considerable portion of the adjoining Loddon United Waterworks Trust District with water for domestic and stock use.

(e) *Werribee River Schemes.* (1) *Bacchus Marsh.* The headwork of this gravitation scheme is a reservoir of 15,000 acre-feet capacity on Pyke's Creek, a tributary of the Werribee, the intake from the creek catchment being supplemented by a tunnel through a dividing spur, which taps the Werribee River near Ballan. The area of the district is 6,700 acres—half of which is irrigable and includes some of the richest lucerne land in the State. The annual water right is one acre-foot per irrigable acre, and the present compulsory charge is 22s. 6d. per acre-foot of such right. The higher portion of the district receives a supply for domestic and stock purposes.

(2) *Werribee.* This is another gravitation scheme on the same river, with a reservoir of 17,000 acre-feet capacity at Melton as its headwork. The irrigation district comprises 10,000 acres of first-class land, being the irrigable portion of the Werribee Closer Settlement Estate, which is within 20 miles south-westerly of Melbourne. The water-right allotment is one acre-foot per irrigable acre, and the charge at present is 12s. per acre-foot. The non-irrigable portion of the estate, containing about 13,000 acres, is supplied with water for domestic and stock purposes.

(f) *Macallister River (Maffra) Scheme.* The works of this scheme, the first irrigation scheme in the south-eastern portion of the State, now in course of construction, comprise a storage reservoir on the Macallister River, at Glenmaggie near Heyfield, and a system of main and distributary channels capable of commanding by gravitation some 80,000 acres of the rich river flats along the Macallister, Avon, and Thomson Rivers, near Maffra, Stratford, and Sale. The conditions in these areas as to quality of lands and annual rainfall are similar to those at Bacchus Marsh and Werribee before irrigation. The design of the dam—a large cyclopean concrete structure 1,000 feet in length—provides for the raising of water to a maximum height of 100 feet above the foundations. The catchment area above the dam is 813 square miles and the area submerged at full supply level will be 4,500 acres, while the capacity of the storage will be 150,000 acre-feet, and the unregulated flow of the river will yield an additional 100,000 acre-feet. The construction of the works is practically complete. Approximately 105,000 acre-feet of water can now be stored, and arrangements can be made to store the whole volume of

150,000 acre-feet when required. The commanded lands are specially suitable for beet culture and dairying, and include some 11,000 acres acquired by the State Rivers and Water Supply Commission for soldier settlement. The area first supplied was 8,000 acres of the Avon River flats, including the Boisdale Closer Settlement Estate, and was constituted the Maffra Irrigation District in 1927. This district was subsequently extended to include a total supplied area of 23,000 acres. Further extensions of the channels enabled supplies to be given to settlers on some 6,000 acres of closer settlement estates, and 9,000 acres of private holdings in the vicinity of Sale, and the Sale Irrigation District of 15,000 acres was constituted accordingly, making the total area now served by the Maffra-Sale system 38,000 acres. Outlets for the produce of irrigated farms are already provided by the sugar, butter, and condensed milk factories, which are within easy reach, while the proximity to railway stations ensures to settlers the necessary transport facilities.

(iii) *Domestic and Stock Schemes.* (a) *General.* The second division takes into account the schemes constructed and under construction for the supply of water for domestic and stock purposes, the capital expenditure on which at 30th June, 1929, was £9,000,000. The area of country lands artificially supplied with water for these purposes is 23,953 square miles. The number of towns supplied, exclusive of the City of Melbourne and its suburbs, is 218, serving an estimated population of 386,800. In addition to the Commission's districts, some large areas are still administered by local authorities.

(b) *Wimmera-Mallee System.* The principal scheme in this division is that known as the Wimmera-Mallee Gravitation Channel System. This comprehensive scheme of works will compare favourably, it is believed, with any similar individual scheme for domestic and stock service in any part of the world. The main supply is drawn from five reservoirs in the catchment area of the Wimmera River, at the foot of the Grampians Ranges, viz.:—Lake Lonsdale, Wartook, Fyans Lake, Taylor's Lake, and Pine Lake. The reservoirs in use, including some minor works, have a combined storage capacity of 183,080 acre-feet. The completion of the works in progress will bring this total to 213,080 acre-feet. The water is conveyed partly by natural watercourses but chiefly by artificial channels aggregating 5,720 miles in length over farming districts comprising about 11,000 square miles, approximately one-eighth of the whole State (see Official Year Book No. 13, map on page 562). This system also furnishes supplies for 36 townships controlled by the Commission, and 6 towns controlled by local Waterworks Trusts or Shires. The construction of the new main channel from the Wimmera River at Glenorchy to the important town of Charlton on the Avoca River provided not only a full gravitation supply of good quality to that town, in lieu of the poor unsatisfactory supply previously pumped from the Avoca River, but, in addition, greatly improved supplies for domestic and stock purposes to about 236,000 acres in the districts of four local Waterworks Trusts, and the area so served has, with the concurrence of those bodies, been added to Waterworks Districts under the jurisdiction and control of the Commission. As this area included the entire districts of the West Charlton and Shire of Donald Waterworks Trusts, these trusts were abolished under the provisions of the Water Acts.

The rainfall on the Wimmera catchment during the last few years has been so light that watering had to be commenced with partially depleted storages. There has been a considerable increase in the quantity of water used in both urban and rural districts, as the average capacity of farmers' storages has doubled during the last fifteen years, and the consumption in urban districts has risen to 80 gallons per head per day, as compared with a consumption of 56 gallons per head for Melbourne.

The Commission, after consideration of these facts, has extended the Waranga Western Main Channel north-westerly for about 130 miles west of the Loddon River to the Yarriambiack Creek, in order to supplement the Wimmera-Mallee supplies from the more permanent streams to the eastward during winter periods, when water could be made available without affecting irrigation supplies. This extension commands practically the whole of the area served by the Wimmera-Mallee system north of the 36th parallel, thus leaving the Wimmera catchment available for the southern portion of the area dependent on the system.

(c) *Northern Mallee Water Supply Scheme.* In what is known as the northern Mallee, an area of about 1,250,000 acres, adjoining the Wimmera-Mallee Gravitation Channel System, but above its channel level, the Commission has provided a water supply for the large wheat holdings in the Walpeup and adjoining districts, by means of bores and large public tanks. The number of successful Government bores in use in this area is 99, their average depth being 460 feet. There are also 260 tanks, having a total capacity of 1,210,000 cubic yards, or 204 million gallons.

(d) *Carwarp Scheme.* The works of this scheme—a system of distributary channels—were constructed to provide domestic and stock supplies for an area of 215,300 acres of Mallee lands situated immediately south of the Red Cliffs Irrigation District and traversed by the Mildura Railway, the supply being drawn from the Red Cliffs pumping station. The whole of this area was at first embraced within the Carwarp Waterworks District, but, subsequently, an improved supply was given to some 15,000 acres around the railway station, and above the general level of the surrounding country, by means of a pump and rising main, with 13 miles of channels. The high lands so supplied have been constituted the Carwarp Central Waterworks District, and some 14,000 acres were transferred to the Millewa District.

(e) *Millewa Scheme.* This recent and important addition to Victoria's water supply schemes for domestic and stock purposes is designed to serve 1,000,000 acres of the extreme northern Mallee between the Mildura railway and the South Australian border, which has been opened up for settlement by this water supply scheme, and the construction of 55 miles of railway from Red Cliffs westward toward South Australia. The water for this extensive area is drawn from the River Murray. The scheme comprises two main lifts, of about 113 and 145 feet respectively, the first lift being from Lake Cullulleraine on the flats 5 miles from the Murray. This lake, the main storage of the scheme, which holds 2,000 acre-feet, will be filled from No. 9 Lock now in course of construction. Holdings aggregating 600,000 acres have already been allotted to 421 settlers, and, for the service of this area, 670 miles of channels have been excavated, and 37 earthen storages, with a combined capacity of 361,000 cubic yards, have been constructed at convenient distances from railway stations. The first unit of the pumping scheme and the rising main having been completed, water was turned into the channels and storages early in 1924, and in May and June of that year the whole occupied area received a supply of water by channel. The extension of the pumping stations to their final capacity is being proceeded with. The Millewa Waterworks District constituted in 1924 with an area of 250,000 acres has been extended, as the works progressed, till some 619,000 acres are being served. This area includes 209,000 acres above the general level of the district which is being supplied by a lift pumping plant, and which in view of the higher cost of supply has been constituted a separate district known as Millewa Central Waterworks District. The construction of the remaining works of the scheme will precede the throwing open of additional lands for settlement. In this area and the adjacent Sunset country, 80 tanks have been constructed with a total storage capacity of 110,700 cubic yards. The township of Werrimull receives an urban supply for a population of 150.

(f) *Coreena Waterworks District.* A scheme to supply an area of 212 square miles between Tyntynder Waterworks District and the River Murray, but too high to be commanded by the Wimmera-Mallee Irrigation System, has been established at the request of the landholders, mostly returned soldiers. The works comprise a pumping plant on the River Murray, 20 miles below Euston, to deliver 15 cusecs through a 27-in. diameter steel rising main, 60 chains in length, to a high ridge from which 130 miles of main and distributary channels will eventually distribute supplies for domestic and stock purposes. The maximum lift will be 91 feet. The area served has been constituted the Coreena Waterworks District, and the mileage of channel is at present 91.

(g) *The Coliban System* comprises two main storage reservoirs on the Coliban River on the northern slope of the Dividing Range, the "Upper Coliban" with a capacity of 25,700 acre-feet, and "Malmsbury" with a capacity of 12,300 acre-feet, together with main and distributary channels aggregating 340 miles in length, 28 subsidiary reservoirs with a total capacity of 6,910 acre-feet, and 300 miles of urban pipe reticulation. This scheme supplies water for domestic and stock purposes to the city of Bendigo, also to Castlemaine, Maldon, and eighteen other townships, and the interjacent rural districts



This map was included in the Report of the Third Interstate Conference on Artesian Water held in Adelaide during September, 1921. The area has been slightly extended since the year named. See also letterpress on page 636.

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containing in all about 176,000 acres. The population served is 61,000. This system also supplies the demands of the quartz and sluice mining industries throughout this area, and provides water for irrigation for orchards, market gardens and similar purposes, the area irrigated annually being about 8,000 acres.

(h) *Naval Base and Mornington Peninsula Scheme.* Another scheme in this division which calls for mention here is the Naval Base and Mornington Peninsula Scheme. This comprehensive scheme—prepared at the request of the Naval Authorities—is for the supply of water to the Flinders Naval Base, at Crib Point, and for the service of nineteen other townships, including the bayside resorts at Aspendale, Edithvale, Chelsea, Carrum, Seaford, Frankston, South Frankston, Mornington, and Mount Martha, and the inland townships of Beaconsfield, Berwick, Dandenong, Noble Park, Spring Vale, Pakenham, Cranbourne, Somerville, Hastings, and Bittern. An ample supply of water is obtainable both for ordinary domestic and stock use and for market gardening, in the vicinity of Dandenong, from the headwaters of the Bunyip River, which drains some 30 square miles of forest country above the point of off-take.

The scheme was extended to supplement the supply to the township of Dandenong previously controlled by a local Trust, the works of which were then transferred to the Commission, which administers them as part of the general scheme. The expansion of the reticulation systems in this district having necessitated the provision of additional supplies to meet the demand during dry periods, the Commission has constructed a new Main Supply Line from Toomuc Creek to the headwaters of the Bunyip River. This extension, which includes 25 miles of open race and 8 miles of 2-ft. pipes, has proved conclusively the value of that river as a source of supply for the Mornington Peninsula areas. A storage reservoir is being constructed near Dandenong.

An important development of this scheme was the purchase by the Commission of 3,300 acres of land in the vicinity of Narre Warren, on the main Gippsland railway, for closer settlement under irrigation. This land, which is within about 25 miles of the metropolis, is being subdivided into blocks of 10 to 15 acres, suitable for market gardening and other forms of intensive culture. Drainage works are being provided where necessary, and every block will receive a satisfactory supply of water under pressure from a pipe system connected with the main race. Electricity for all purposes will be available from the works of the Electricity Commission. The land is being settled under the ordinary closer settlement conditions, and there is a good demand for the blocks.

(i) *The Bellarine Peninsula Works.* The long-felt need of an efficient water supply for this peninsula, including the towns of Portarlington and Queenscliff on Port Phillip Bay and the seaside resorts along the south-western coastline of that area, led to investigation of proposals for a similar scheme to serve these areas by supplies drawn from the headworks of the Barwon River. A comprehensive scheme is now in progress and comprises a storage reservoir at Wurdee Boluc, an inlet channel tapping tributaries of the upper Barwon, a main outlet channel to a pipe head basin at Wauru Ponds, a pipe main thence to Geelong and to the main distribution basin near Drysdale, and channels and pipe mains thence to local service basins for the peninsula towns, also separate channels from the main outlet channel to service basins for Torquay and Anglesea. The construction of the first stage of Wurdee Boluc storage has been completed, also 42 miles of the main inlet channel, and 3 miles of 24-in. pipe main from Wauru Ponds pipe head basin to the branch main which serves Geelong.

(j) *The Kerang North-West Lakes Works* consist of a chain of lakes, situate a few miles to the north-west of Kerang, connected by channels to each other and to the Loddon River, and improved so as to be capable of storing 92,000 acre-feet of water. This system serves, for domestic and stock purposes, an area of 49,000 acres, constituted the "Kerang North-West Lakes Waterworks District." The supply from the Loddon River was insufficient and the lakes are filled by gravitation from the Torrumbarry Weir, on the River Murray, via the Kow Swamp Irrigation Works. The water is diverted along Sheepwash Creek—an improved natural effluent from the Loddon—the river level having been raised by a concrete weir at Kerang. As in the Coliban District,

water is sold on application for irrigation purposes, about 5,500 acres having been irrigated annually from this source for some years. These irrigation facilities have been so appreciated that, in response to a demand, about 30,000 acres were excised from this district and constituted the Mystic Park and Third Lake Irrigation Districts. (See page 645 *ante*.)

(k) *The Broken River Works* comprise two weirs—"Casey's" and "Gowangardie"—above Shepparton, and offtake works therefrom, for the diversion of water into the channels of the Tungamah, Shepparton, and Numurkah Waterworks Trusts.

(l) *The Wonthaggi Works* comprise a storage reservoir on Lance Creek, capacity 421,000,000 gallons, a main pipe line therefrom 9 miles in length to the coal-mining towns of Wonthaggi and North Wonthaggi, a service reservoir—capacity 1,400,000 gallons, and 24 miles of pipe reticulation for the service of those towns. The population supplied is 10,000, and there is a service to the State Coal Mine and Railways Department.

(iv) *Flood Protection.* The Water Acts of Victoria provide for the constitution of Flood Protection Districts, in which the residents are rated for schemes carried out for their benefit. The works are constructed, and districts administered by the State Rivers and Water Supply Commission, and the Commission has carried out extensive schemes at Koo-wee-rup and Cardinia, in the south-eastern portion of the State, at Loch Garry and Kanyapella on the Goulburn River between Shepparton and Echuca, and works on a smaller scale at the town of Echuca.

The Koo-wee-rup and Cardinia Flood Protection Districts together embrace the whole of a large continuous depression south of the main Gippsland railway and along the sea-board of Westernport, containing in all about 100,000 acres of very fertile country, the proper development of which was seriously retarded by periodical inundations. A large portion of the land was reclaimed, subdivided, and settled by the State, but it became evident, during periods of heavy rainfall, that only a comprehensive drainage scheme for the whole area affected would afford the needed protection from flooding.

At the request of the settlers, the Commission prepared schemes for this purpose, and, after the concurrence of the settlers had been obtained, practically carried the schemes into effect, and the two large districts above-mentioned were constituted, and are now being rated on an acreage basis in respect of benefits derived from the works. The Commission's works are now well advanced, and provide flood protection from all but abnormal floods, and the duration of even these is considerably shortened and their effect correspondingly lessened as the result of the works, which consist of the substantial enlargement and remodelling of most of the existing principal drains, the construction of new internal drains, and the cutting of several distinct outlets, thus avoiding concentration of flood waters in the main drains.

The Loch Garry Flood Protection Works comprise about $5\frac{1}{2}$ miles of earthen levee banks around Loch Garry, and a concrete regulator and spillway 400 feet in length, to control overflows from the loch. The purpose of the scheme is to protect some 40,000 acres of lands previously flooded by overflows of the Goulburn River by way of Loch Garry and Bunbartha Creek. The Kanyapella Scheme provides for the conservation of a domestic and stock supply in Warrigal Creek, and the exclusion therefrom of certain flood waters. The area benefited is 13,500 acres. Both schemes have been approved by a majority of the landholders concerned and are now in operation.

(v) *Mildura.* The Mildura Irrigation Scheme is controlled by the First Mildura Irrigation Trust, and water is obtained by pumping from the River Murray. The area of the settlement is 45,000 acres, of which 14,000 acres are under intense culture, vines predominating. During the year ending 30th June, 1929, the Trust's receipts aggregated £48,944, and its expenditure £36,242; whilst loans—exclusive of £17,437, arrears of interest—advanced by the Government, amounted at 30th June, 1929, to £96,837. The number of water-acres supplied during the year was 52,726.

4. Queensland.—The main irrigation works in Queensland are as follows :—

(i) *Dawson Valley Scheme.* The Dawson Valley Irrigation Scheme, now in its initial stage, comprises :—(a) A concrete dam at Nathan's Gorge, some 30 miles below the town of Taroona, to impound 2,500,000 acre-feet of water : (b) an offtake weir 80 miles down stream for the diversion of water for the irrigation of 70,000 acres in the Dawson Valley ; and (c) Theodore Zone (see below).

The Dawson River rises in the Great Dividing Range. The catchment above the proposed Nathan Dam is 9,000 square miles, over which the average annual rainfall is 27 inches. An arched dam is involved, with termini on lines tangential to the curve. The rock forming the foundations is a hard sandstone, the crushing strength of which ranges from 3,000 to 5,000 lb. per square inch. It is designed to fix the water level 130 feet above summer level at the site, and the crest height at 145 feet, with a spillway on the left bank. The crest length of the dam will be 860 feet, 500 feet on the curved portion. The reservoir will be the largest artificial storage in the world.

An approach road from Wandoan Railway Station to the dam site has been under construction during the year. This is 54 miles in length and now available for traffic, so that the carting of plant and materials for the construction of the Nathan Dam can be commenced at an early date.

The irrigable lands are of a good agricultural type with fair capillarity, ample humus, and containing liberal amounts of all mineral plant foods in readily available form. About 120,000 acres are commanded on the eastern side of the river, and 80,000 on the western side. A hydro-electric station at the Nathan Dam may utilize the water power to irrigate high level lands not commanded by gravitation, provide stock and domestic supplies to dry areas, power for factories, and light throughout the settlement.

The Dawson Valley is situated in the Central Division of the State, which comprises 209,340 square miles, or nearly one-third of the total area of Queensland. The population is less than one person to two square miles, and subtracting those resident in the principal towns, the ratio is one inhabitant to four square miles, although there is only a comparatively small proportion of inferior land in the whole area. This irrigation scheme not only provides an opportunity for increasing population and extending agriculture, but will also form a fodder reserve area for pastoral lands where rainfall is insufficient for agriculture, and water conservation impracticable. A fodder conservation proposal is being considered for the early stages of settlement with this end in view, and to give settlers an opportunity readily to dispose of some of their produce.

A railway line is constructed through the irrigation areas from the terminus of the Dawson Valley line at Baralaba to Theodore, the first zone to be settled.

In order to minimize heavy interest charges accruing during the process of construction, the project has been designed on the zone system, by which one area is prepared for settlement and completed before the next zone is proceeded with. Five zones have been designed, each comprising a certain area of irrigated land attached to a considerable acreage of dry lands. The dry lands will be allotted in proportion to irrigated land held. Though forming an integral part of the gravitation system, each zone will be a separate entity, served by its own central township, and in close connexion with the Dawson Valley railway system.

Theodore Zone. On the completion of all necessary works for irrigation purposes the Theodore zone of 30,000 acres was thrown open for selection on 1st November, 1926, and by the 30th June, 1928, 258 farms were occupied. This area is divided into 373 farms, of which 264 are irrigated and 109 are attached dry farms. A considerable proportion of the latter consists of good vine scrub land, and all is classed as soil suitable for agriculture, on which dry areas products such as wool, butter, cotton, etc., can be raised in conjunction with an irrigation farm, as an insurance over dry periods. The rich country back from the river flats is expected to form a great attraction to settlement. The pumping station established on the river operated satisfactorily during the past year. The river bank at this point is higher than the surrounding 5,000 acres, so that

when the water is pumped up, the channels radiating from the Power Station carry it by gravitation. Local storage of over 5,000 acre-feet has been obtained by the erection of a timber and earth weir below the pumping station, the crest of which is 13 feet above ordinary summer level of the river.

(ii) *Inkerman Irrigation Area.* This area embraces a total of approximately 58,000 acres and is located in a delta of the Burdekin River in the Home Hill—Ayr district 57 miles inland from Townsville. Ample supplies of water are located in shingle and sand underlying fertile soil, and irrigation is accomplished by means of electric motor-driven pumping sets located in concrete-lined walls at suitable points throughout the area. At the commencement of the scheme, tests were made on the supply bed by pumping at the rate of 1,000 gallons per minute for 14 days continuously without any appreciable diminution in the supply. The scheme comprises a central power-house equipped with two steam turbine driven generating sets giving 6,600-volt. 3 phase A.C. current which is transmitted over approximately 100 miles of H.T. overhead lines throughout the area to transformer sub-stations located near the pumping sets. The H.T. current is then reduced to 415 volts by means of transformers and fed to the motors operating the pumps which discharge into head ditches direct on to the land to be irrigated.

At the present date, there are 196 blocks in occupation with an average area of 100 acres each. Approximately 6,000 acres are continuously under irrigation, the crops comprising sugar-cane almost exclusively. To supply the demand there has been provided 202 pumps, 219 motors, ranging in size from 5 to 95 h.p. and 145 transformers. Pumps vary in capacity from 35,000 gallons per hour to 180,000 gallons per hour discharge the highest pumping head being 88 feet.

The installed capacity of the power house is 2,650 kw., a supply being also given to the township of Home Hill where 170 consumers are provided with domestic power and lighting.

The following statistics show the growth of the Area :—

Year.	Total Units generated.	Units supplied to Township.	Units used on Irrigation.	Number of Days Irrigation.	Average Acres under Irrigation.	Tons of cane crushed.	Average tons per acre.
1926-27 ..	2,626,099	34,887	1,763,445	164	4,763	126,000	26·5
1927-28 ..	2,196,861	36,679	1,586,842	170	5,065	103,137	20·3
1928-29 ..	2,130,706	57,773	1,538,557	168	5,258	140,808	26·7

The maximum load carried by the power-house, and the coal consumed, &c., are given below :—

Year.	Average Load Carried.	Maximum Load Carried.	Coal Consumed.	Average Cost per Ton.	Pounds of Coal per unit Generated.
	kw.	kw.	tons.	£ s. d.	
1926-27.. ..	740	1,470	3563·5	1 11 2	4·44
1927-28.. ..	720	1,750	3322·0	1 7 4½	4·58
1928-29.. ..	900	1,940	3015·5	1 6 5	4·35

(iii) *Other Schemes.* Smaller schemes include Townsville (wells, creek, and river); Rockhampton (wells, river, creek, etc.); those at Bingera, near Bundaberg, which utilize water pumped from the Burnett River just above the point of meeting of the salt and fresh waters; and those at Fairymead, which utilize water pumped from a number of shallow spear wells sunk on the alluvial flats on the north side of the Burnett River and about 6 miles from Bundaberg.

5. *South Australia.*—(i) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established on similar lines to Mildura, but on a smaller scale. The area of settlement is 23,000 acres, and the irrigated area 7,700 acres, while the population of the town and settlement is 4,800. Water is obtained from the Murray by gravitation and by pumping. The main pump situated on the river bank lifts the water into a large lagoon, from which three other pumps of 17 feet, 26 feet, and 27 feet-lift raise the water and irrigate 950, 4,200, and 1,800 acres respectively. A fifth pumping plant again lifts the water 26 feet and irrigates 750 acres. The total length of the channels is 78 miles, and of roads 98 miles, while the annual water rate is £2 5s. per acre. Cultivation on the settlement is as follows: Sultanias, 2,441 acres; currants, 1,335 acres; gordos, 922 acres; doradillos and wine grapes, 404 acres; pears, 155 acres; apples, 8 acres; apricots, 292 acres; peaches and nectarines, 109 acres; citrus fruits, 438 acres; figs, 11 acres; prunes, 7 acres; olives, 39 acres; miscellaneous fruits, 16 acres; and the balance in fodder crops. The most up-to-date and largest fruit-packing shed in the State is situated at Renmark, and is co-operatively owned, as is also a large distillery for the manufacture of grape spirit. There are several private packing sheds and a private distillery.

(ii) *Other Waterworks.* A number of country waterworks is under the control of the Public Works Department. As, however, they are not irrigation works properly so called, but are used for supplying water for domestic purposes, etc., to several towns, no further reference will be made to them in this chapter. (See chapter on Local Government.)

(iii) *Areas under Irrigation.* The Irrigation Areas on the River Murray above Morgan under Government control up to the end of December, 1929, contained 27,895 acres of irrigable land, of which 19,205 acres were allotted to 1,087 settlers, including 485 returned soldiers. The pumping plants at present installed or being installed on these areas aggregate 7,653 brake horse-power, with a pumping capacity of over 12 million gallons per hour. These lands are devoted almost entirely to fruit growing, including citrus, deciduous and vine fruits.

The *Cadell Irrigation Area* is 7 miles by river above Morgan, and comprises 2,727 acres, of which 1,098 are irrigable. Blocks have been allotted to 49 soldier settlers and 9 civilian settlers. The area is suitable for fruit growing. The pumping plant is a 190 b.h.p. steam plant, with a capacity of 4,200 gallons per minute against a head of 75 feet. Two semi-Diesel crude oil pumping plants of 25 and 35 h.p., and having capacities of 417 and 700 gallons per minute respectively, have been installed to deal with seepage water. This area was first allotted on 30th September, 1919.

The *Waikerie Irrigation Area* is situated 39 miles above Morgan by river. It is settled by 250 settlers (10 of whom are soldier settlers) occupying 10,166 acres, of which 3,384 acres are irrigable.

The area is divided into three divisions, viz., the Waikerie, Ramco, and Holder Divisions. The Waikerie and Ramco Divisions comprise 9,290 acres, of which 3,354 acres are irrigable, and the Holder Division contains 2,486 acres, of which 452 acres are irrigable.

The irrigable land is used for the cultivation of fruit trees and vines.

These three divisions were originally village settlements established in 1894 for the relief of the unemployed. The communistic form of control was not successful and the schemes reverted to the Crown.

The irrigable areas were subsequently increased by pumping to higher levels, land in the extension areas being first allotted in 1910.

Pumping Plants. Three Diesel units totalling 1,170 b.h.p. have replaced the four suction gas and one steam units. Their combined capacity is 16,667 gallons per minute against a total head of 140 feet.

Two of the old suction gas units of a total b.h.p. of 560 and a capacity of 5,833 gallons per minute have been retained as stand-by plants.

Holder Division consists of two steam units, with a total of 238 b.h.p. and a capacity of 3,750 gallons per minute against a total head of 115 feet. An adjoining irrigable area of 110 acres held by Holder Limited is also irrigated by the above units. This plant, however, will be superseded by a gravitational scheme from the Waikerie channels.

The *Kingston Irrigation Area* is situated 75 miles above Morgan by river, and comprises the old village settlement of that name. It has a total area of 3,795 acres, of which 470 acres are irrigable, and has been allotted to 35 settlers. The water is pumped by a 130 b.h.p. steam plant with a capacity of 2,000 gallons per minute against a total head of 114 feet.

The *Moorook Irrigation Area*, adjoining the Kingston Area, contains 5,971 acres of land, of which 613 acres are irrigable. All of the irrigable land has been allotted to 40 settlers, of whom 9 are soldier settlers. The control of the original scheme was taken over by the Government in February, 1915, and the area to be irrigated was extended. The first allotment of the extension area took place in March, 1916. This area is irrigated by a 430 b.h.p. steam plant of two units, with a capacity of 7,160 gallons per minute against a total head of 120 feet.

The *Cobdogla Irrigation Area* is on the opposite side of the river to Kingston and Moorook Areas. It was formerly a sheep station held under pastoral lease, and was resumed by the Government for irrigation purposes. The total area of the station was 160,000 acres, of which 23,400 acres has been set apart as the Berri Area, and the remaining 136,600 acres as the Cobdogla Area. The latter area includes Lake Bonney, 4,000 acres in extent. This lake is situated 3 miles inland from the Murray from which, now that No. 3 Lock is in operation, it is kept partially filled by Chambers Creek.

The Cobdogla Area contains about 34,500 acres of land capable of being irrigated. It is divided into 5 sections, viz., the Cobdogla, Nookamka, Loveday, McIntosh, and Weigall divisions. The 73 civilian and 150 soldier settlers on the area occupy 4,536 acres of irrigable land and 53,984 acres of dry land. The first allotment took place in 1918.

The Cobdogla division has been developed as a low-lift area, the pumping head being about 34 feet, to irrigate 1,405 acres of land. About one-half of this is devoted to lucerne and other fodders for sheep raising.

The Nookamka division, south of Lake Bonney, has an irrigable area of 2,503 acres.

The Loveday division has an irrigable area of 8,627 acres. The reticulation on this division is by means of concrete pipe lines, for both mains and branches, instead of open channels.

The *Weigall Division* contains approximately 9,000 acres that could be irrigated, but with the falling off in the demand for land for fruit growing, no development work has been undertaken. A number of small blocks has been allotted for dry farming to settlers who hold irrigable land in adjoining areas, and the remainder of the division has been divided into 9 blocks of about 3,000 acres in area for grazing and cultivation and let under Miscellaneous Lease.

The *McIntosh Division* contains approximately 14,150 acres, subdivided into 13 large holdings to be let as dry land under Miscellaneous Lease. There are 7 civilian settlers.

Pumping plants have been installed to supply water to the Cobdogla, Nookamka and Loveday divisions. On the Cobdogla division a 240 b.h.p. steam plant with a capacity of 16,700 gallons per minute has been installed and is now used as a subsidiary plant. The main water supply is obtained from the two "Humphrey" gas plants installed with a combined capacity of 47,600 gallons per minute. The Nookamka division has two steam units, totalling 640 b.h.p., installed with a combined capacity of 12,500 gallons per minute, which have recently been superseded by a pipe line connecting with the Loveday water mains, which now supply the Nookamka requirements. The Loveday division has a 300 b.h.p. suction gas unit, with a capacity of 6,000 gallons per minute, and two steam units installed, with combined power and output of 1,315 b.h.p., and 33,300 gallons per minute respectively, pumped against a total head of 93 feet.

The *Berri Irrigation Area* is 120 miles above Morgan by river, and contains a total area of 23,400 acres, of which 7,802 acres are suitable for fruit and vine culture. A total of 7,561 acres of irrigable land has been allotted to 437 settlers, of whom 230 are soldier settlers. An area of 80 acres of the irrigable land is used as an experimental farm. The first allotment of the older portion of this area took place in January, 1911. The pumping plant consists of five units, three suction gas and two steam units, with a total of 2,250 b.h.p., and a capacity of 42,500 gallons per minute against total heads varying from 50 feet to 120 feet.

The *Chaffey Irrigation Area* comprises a large area of country adjacent to Renmark. Preliminary survey work has been carried out over 14,000 acres of prospective irrigable land. A portion of this area, known as the *Ral Ral Division*, containing 2,023 acres, of which 1,571 are irrigable land, has been surveyed into blocks. A total of 1,011 acres, including 892 acres of irrigable land, has been allotted to 44 settlers, 37 of whom are soldiers. A pumping plant of 220 b.h.p., with a capacity of 12,500 gallons per minute against a total head of 30 feet has been installed.

The *Irrigation and Reclaimed Swamp Areas* under Government control on the River Murray below Morgan contain 9,890 acres of rateable land, i.e., 852 acres of high irrigable and 9,038 acres of reclaimed swamp land, allotted to 319 settlers, of whom 39 are soldier settlers. The former land is irrigable by pumping, and is devoted to the production of citrus, deciduous and vine fruits; the latter is watered by gravitation and its production is confined to fodder for dairying and sheep raising.

Pumping plants installed total 1,469 b.h.p., with a capacity of $5\frac{1}{2}$ million gallons per hour.

Mobilong and Burdett Divisions of the Murray Bridge Irrigation Area, adjoining Murray Bridge, contain 577 acres of irrigable reclaimed fodder land with 45 settlers, of whom one is a soldier.

Long Flat and Monteith Flat below Murray Bridge have between them a reclaimed irrigable area of 1,340 acres, all of which has been allotted to 48 settlers, of whom one is a soldier.

Swanport Area below Murray Bridge has 192 acres of fruit and fodder land, and is allotted to one civilian settler.

The *Jervois Irrigation Area* is situated from 10 miles to 22 miles by river below Murray Bridge and contains 17,413 acres, 3,169 acres being reclaimed swamp. There are 79 settlers on the area, 8 of whom are soldiers. The allotted land comprises 3,147 acres of reclaimed swamp and 13,595 acres of dry land.

The area is divided into four divisions, viz., Woods Point, Jervois, Wellington, and Highland Divisions. The first three consist mostly of reclaimed swamp, and the Highland Division contains dry or "high" land which is allotted to the settlers on the three swamp divisions.

The *Mypolonga Area* is 9 miles above Murray Bridge, and has a river frontage of 7 miles. The total area of this settlement is 5,792 acres, of which 852 are irrigable high land and 1,356 acres irrigable reclaimed land. A rateable area of 2,144 acres has been allotted to 89 settlers, of whom 3 are soldiers.

The *Pompoota Area*, situated 13 miles above Murray Bridge, was previously used as a Training Farm for prospective soldier settlers. The area contains 2,469 acres, of which 385 acres are irrigable reclaimed land. The whole of the rateable area has been allotted to 8 soldier settlers and 5 civilian settlers.

The *Wall Area*, 16 miles above Murray Bridge, has an area of 995 acres, of which 464 acres are rateable reclaimed swamp land. Nine soldiers and two civilians are settled on the area.

The *Neeta Irrigation Area* is 20 miles above Murray Bridge, and contains a total of 2,778 acres, of which 542 acres are rateable reclaimed swamp land. The rateable area of 525 acres has been allotted to 7 civilian and 8 soldier settlers.

The *Cowirra Irrigation Area* is 20 miles above Murray Bridge, and contains a total of 2,368 acres, of which 573 acres are rateable reclaimed swamp land. A rateable area of 484 acres has been allotted to 16 civilian settlers and one soldier settler.

The *Baseby Area* is about 21 miles above Murray Bridge, and has an area of 1,350 acres. This area has been leased to a civilian settler. 528 acres are reclaimed swamp.

The reclaimed lands on the River Murray consist mainly of peaty soils composed of rich river silt, and are eminently suitable for the growth of lucerne and other fodders, onions, potatoes, etc. The soils of the irrigable lands have already proved their suitability for the production of peaches, apricots, nectarines, oranges, lemons, figs, and grapes, etc.

(iv) *Allotment of Irrigated Land.* All lands are allotted under perpetual lease, and blocks are surveyed into areas varying up to 50 acres of high irrigable or reclaimed swamp land. It is not the practice to allot more than 50 acres of irrigable or reclaimed land, or of both irrigable and reclaimed, to any one settler, except that in the case of a partnership 50 acres may be allotted for each member of the partnership up to a maximum of 150 acres.

In addition, areas of non-irrigable land are allotted to lessees of irrigation and reclaimed blocks for dry farming. The rentals of the blocks are fixed by the Irrigation Commission immediately prior to the land being offered for application. For the reclaimed land an amount is charged sufficient to cover interest on cost of the land, the survey thereof, and interest on cost of the levee; while for the irrigable land the rent is based on the unimproved value of Crown lands, or to cover interest on cost of repurchased lands.

On the irrigable land, the present rate is 60s. per acre per annum. On the reclaimed lands an amount is charged to meet the annual management, drainage, maintenance expenses, and certain interest charges, the present rate being 30s. per acre. A sliding scale applies to the rent on all land and water rates on the irrigable land for the first four years, i.e., first year, one-quarter of the full rent and water rates; second year, one-half; third, three-quarters; fourth and afterwards, full amount, per acre. On the irrigable lands each lessee is entitled for the water rates to 24 acre-inches per annum, supplied mostly in four irrigations; special irrigations and domestic supplies are available at a nominal cost at times other than during the general irrigations. On the reclaimed lands, water is supplied as required.

Liberal assistance is provided by the Government to lessees of irrigation blocks. Apart from the erection of pumping plants, construction of main channels and other work necessary to render the land ready for occupation, the Irrigation Commission has power to carry out improvements in the nature of clearing, channelling, fencing, etc. The lessee on allotment is required to take over any expenditure so incurred, and to pay an amount of not less than 15 per cent. of the cost of the work. Subsequent to allotment the Commission has power to expend a sum not exceeding £30 per acre of the irrigable land in any lessee's block in making the following improvements, or any of them:—Fencing, clearing, grading, constructing irrigation channels, drains and tanks thereon, and connecting such channels or drains with the nearest main channel or drain. The lessee is required to pay a deposit before the work is commenced equal to not less than 15 per cent. of the Commission's estimate of the cost of carrying out such improvements. The Commission may also make cash advances to any lessee for all or any of the following purposes:—

- (a) For carrying out improvements and the erection of buildings to the extent of the estimated value of the lease and improvements already made or in course of being made thereon, but not exceeding £650.
- (b) For the purchase of implements, stock, seeds, plants, trees, etc., to any amount not exceeding £200.
- (c) For any other purpose that may be approved by the Commission, but not exceeding three-fourths of the estimated value of the lease and any improvements already made thereon.

The total amount that may be expended or advanced, however, for all or any of the above purposes, including improvements carried out by the Commission, shall not exceed in aggregate the sum of £600, or £30 per acre of the irrigable portion of the land, whichever sum is the greater.

All expenditure incurred by the Commission in improving the land either before or after allotment, or advanced to the lessee to carry out further improvements, must be repaid under the following conditions:—For the period of 5 years following the date on which the land was allotted or advances made, the lessee shall pay interest on the amount at current rates. After the expiration of 5 years, the lessee is required to repay the amount expended or advanced by 70 equal half-yearly instalments, together with interest at current rates on the balance remaining unpaid.

6. **Western Australia.**—In this State an Irrigation Act provides for the constitution of irrigation districts. At Harvey, works for irrigating about 4,000 acres devoted to fruit growing, principally oranges, were opened on the 21st June, 1916.

Numerous small private irrigation schemes are in full operation on many of the south-west rivers, in connexion with fruit, fodder, and potato growing.

7. **Murray Waters.**—(i) *River Murray Agreement.* The River Murray Agreement, with subsequent amendments, entered into by the Governments of the Commonwealth and the States of New South Wales, Victoria, and South Australia, provides for the construction of the following works:—(a) The Hume reservoir, (b) The Lake Victoria storage, (c) Twenty-six weirs and locks in the River Murray, and (d) Nine weirs and locks in the River Murrumbidgee. In the agreement provision is made for these works to be undertaken by the Governments of the three States—the Hume Reservoir and 17 weirs and locks between Echuca and Wentworth, including that at Wentworth, to be constructed by the Governments of New South Wales and Victoria severally or jointly, as may be mutually agreed upon by them; the 9 weirs and locks in the River Murrumbidgee to be constructed by the Government of New South Wales; and the Lake Victoria Storage and 9 weirs and locks in the River Murray below Wentworth by the Government of South Australia.

The River Murray Commission, appointed in pursuance of the Agreement referred to, and comprising a representative of each of the four contracting Governments, is charged with the duty of giving effect to the Agreement and the River Murray Waters Acts.

(ii) *Works.* (a) *General.* The works which have been put in hand to date, with the exception of the weir and lock at Blanchetown, which was commenced before the Agreement came into operation, have been or are being constructed in accordance with designs approved by the River Murray Commission.

The following are the works which have been put in hand:—

The Hume Reservoir,	}	By the Governments of New South Wales and Victoria.
Weir and Lock No. 26 (Torrumbarry, near Echuca),		
Weir and Lock No. 11 (Mildura),		
Weir and Lock No. 10 (Wentworth), a little below the junction of the Rivers Murray and Darling.		
*Weir and Lock, No. 15, near Euston,	}	By the Government of South Australia.
The Lake Victoria Storage,		
Weirs and Locks Nos. 1, 2, 3, 4, 5, 6, 7, and 9.		

* Operations at Weir and Lock No. 15 have been suspended in order that available funds may be utilized for more urgent works.

(b) *The Hume Reservoir.* The site of the Hume Dam, which is being constructed jointly by the Constructing Authorities for New South Wales and Victoria, is located a little below the junction of the Rivers Murray and Mitta Mitta, where the reservoir will receive the run-off from a catchment of 6,000 square miles of mountainous country. The original designs prepared in connexion with this work provided for a reservoir with a capacity of 1,100,000 acre-feet, and the work was put in hand on both sides of the river in accordance with such designs, but with a view to making provision for the greatest possible storage, and in order to enable the reservoir to be utilized for the purpose of hydro-electric generation the four Contracting Governments, acting on expert advice, later agreed to the construction of the dam of dimensions and height sufficient for a capacity of 2,000,000 acre-feet. The cost of the enlarged reservoir is estimated at approximately £8,000,000.

The dam, which is in course of construction, will consist of two main sections—(1) the outlets and flood spillway, and (2) the earthen embankment containing a concrete core wall sunk into the solid granite, and provided with a tunnel for drainage and inspection purposes. The first section, which extends from the New South Wales bank of the river to the Victorian bank, and which will be practically all of concrete, is being constructed by the New South Wales Constructing Authority. The remaining section of the dam, which extends from the Victorian bank of the river to the high ground bordering the river flats, is in course of construction by the Victorian Constructing Authority. The total length of the dam, including both sections above referred to, will be 4,200 feet.

Early in 1929, the gap in the dam on the New South Wales portion of the work was closed, and the outlet and spillway sections raised to a height sufficient to impound 100,000 acre-feet of water. The stored water is at present being discharged through four outlets. On the Victorian side of the river the construction of the earthen embankment and the concrete core wall is considerably advanced. The bridge over the Hume Reservoir in the vicinity of the dam will be completed and open for traffic about August, 1930. The total expenditure incurred to 30th June, 1930, on the whole of the works at the Hume Reservoir amounted to £4,121,000.

(c) *Lake Victoria Storage.* The Lake Victoria Storage is situated in the south-west corner of the State of New South Wales. The scheme approved consists of the construction of extensive embankments and channels, the construction of three regulators (the inlet regulator in the Frenchman's Creek, the controlling regulator in the main inlet channel, and the outlet regulator in the Rufus River), and improvements to Frenchman's Creek and Rufus River.

These works, which are completed, provide for the storage in the lake of 514,000 acre-feet of water for use by the State of South Australia. The expenditure on this work to 30th June, 1930, amounted to £477,185.

(d) *Weirs and Locks.* Nine weirs and locks, viz., No. 10 (Wentworth)—New South Wales—Nos. 11 (Mildura) and 26 (Torrumbarry)—Victoria—and Nos. 1, 2, 3, 4, 5, and 9—South Australia—have been completed, and are now in operation. Preliminary work has been put in hand at No. 7 (South Australia), and No. 6 (South Australia) is practically completed. This weir and lock (No. 6) the last of the works in South Australian territory was officially opened and named the "Simpson Newland" Lock by the Commissioner of Public Works (Hon. M. McIntosh) on the 14th January, 1930.

(iii) *Finance.* (a) *General.* In the River Murray Agreement of 1914, the estimated total cost of the whole of the works was set down at £4,663,000. Although definite estimates of the cost of those works not yet authorized have not been prepared, it is anticipated that the total ultimate cost of the whole of the works covered by the River Murray Agreement will be in the vicinity of £15,000,000. The total expenditure incurred up to 30th June, 1930, on that portion of the scheme completed and in course of construction amounted to £7,906,500, towards which expenditure the four Contracting Governments in conformity with the amending Agreement previously referred to, have contributed in equal shares.

(b) *Programme of Works to be constructed during the period ending 30th June, 1932.* At a conference of representatives of the four Contracting Governments, it was decided definitely to limit the programme of works to be constructed during the period ending 1932 to the following works, viz.:—The construction of the Hume Reservoir to provide for a capacity of 2,000,000 acre-feet; the completion of the Lake Victoria Storage; and the completion of all Weirs and Locks from No. 1 (Blanchetown) to No. 11 (Mildura) and Weir and Lock No. 15 (Euston). Owing to the general restriction of funds it will not now be possible to complete this programme by the 30th June, 1932.

An amount of £800,000 has been made available by the Loan Council for expenditure on works and land resumption during the financial year 1930–31.

The four Contracting Governments will furnish their respective contributions towards this proposed expenditure as required during the year.

(iv) *Gaugings.* The River Murray Agreement places upon the Commission the duty of carrying on an effective and uniform system of making and recording continuous gaugings of the main stream of the River Murray and its tributaries within the boundaries of each of the States of New South Wales, Victoria, and South Australia, and of all diversions, whether natural or artificial or partly natural and partly artificial, from the main stream and its tributaries. It is further provided that, in lieu of making any such gaugings, the Commission may accept any gaugings made and recorded by any of the Contracting State Governments.

Arrangements have been made with the three Contracting State Governments for the adoption of uniform methods in connexion with all gaugings on the River Murray and its tributaries, and for the submission periodically to the Commission, for purposes of the River Murray Agreement, of the results of such gaugings.

The gaugings made at the Renmark Gauging Station during the year 1928-29 indicated that the total flow of the river at that point was 6,375,340 acre-feet for the year. The total flow at the same station for the preceding year was 5,674,653 acre-feet.

The approximate quantity of water diverted from the river by the three States by artificial or partly artificial means for the same year was 1,842,142 acre-feet.

(v) *River Murray Commission.* The River Murray Commission, as at present constituted, is as follows :—

Commonwealth	..	Senator the Hon. John Barnes (President).
		Deputy Commissioner—Mr. T. Hill, M.V.I.E., M.I.E.Aust.
New South Wales	..	Mr. H. H. Dare, M.E., M. Inst. C.E., M.I.E., Aust.
Victoria	..	.. Mr. R. H. Horsfield, M. Inst. C.E., M.I.E., Aust.
South Australia	..	Mr. J. H. O. Eaton, M. Inst. C.E., M.I.E., Aust.
		Secretary—Mr. D. P. Israel, A.I.C.A., A.A.I.S.
		Accountant—Mr. F. A. Piggin.

More detailed references to the River Murray Agreement and the operations of the Commission will be found in previous issues of the Year Book (see Official Year Book, No. 19, pages 845-850).

CHAPTER XXIV.

POPULATION.

§ 1. Enumerations and Estimates.

The nature of the early “musters” of the population and the subsequent Census enumerations which have been conducted in Australia were reviewed in Official Year Book, Number 15, pp. 1083–5. This review was accompanied by a tabular statement showing the dates on which the various enumerations were made, and the numbers counted on such occasions.

§ 2. Census of 1931.

In accordance with the provisions of the Census and Statistics Acts 1905–20, the third Commonwealth Census would have been taken in 1931. Owing to the necessity for economy in government expenditure, however, it has been decided to defer this Census until 1933.

§ 3. Census of 4th April, 1921.

1. Numbers Enumerated.—The Census for the whole of Australia was taken as for the night between the 3rd and the 4th of April, 1921, and was the second Census under the provisions of the Commonwealth Census and Statistics Act 1905–20, which provides for the enumeration being dealt with from one centre, instead of each State being responsible for its own count as on previous occasions. The numbers recorded in the several States and Territories were as follows :—

POPULATION.—4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

States and Territories.		Males.	Females.	Persons.
States—				
New South Wales	..	1,071,501	1,028,870	2,100,371
Victoria	..	754,724	776,556	1,531,280
Queensland	..	398,969	357,003	755,972
South Australia	..	248,267	246,893	495,160
Western Australia	..	177,278	155,454	332,732
Tasmania	..	107,743	106,037	213,780
Territories—				
Northern	..	2,821	1,046	3,867
Federal Capital	..	1,567	1,005	2,572
Australia	..	2,762,870	2,672,864	5,435,734

2. Increase since Census of 1881.—(i) *Australia*.—The increase of population between the Census of 3rd April, 1911, and that of 4th April, 1921, was 980,729, of which 449,835 were males and 530,894 were females, as compared with an increase of 681,204, comprising 335,107 males and 346,097 females, for the preceding ten years. The population of each sex enumerated at the Censuses of 3rd April, 1881, 5th April, 1891, 31st March, 1901, 3rd April, 1911, and 4th April, 1921, was as follows :—

POPULATION.—AUSTRALIA, LAST FIVE CENSUSES.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Date of Census.	Males.	Females.	Persons.	(a) Masculinity.
3rd April, 1881	1,214,913	1,035,281	2,250,194	7.98
5th April, 1891	1,704,039	1,470,353	3,174,392	7.36
31st March, 1901	1,977,928	1,795,873	3,773,801	4.83
3rd April, 1911	2,313,035	2,141,970	4,455,005	3.84
4th April, 1921	2,762,870	2,672,864	5,435,734	1.66

(a) Excess of males over females per 100 persons.

(ii) *States and Territories.* The increases in the population of the several States and Territories during the past four intercensal periods have been as follow :—

POPULATION.—STATES, ETC., INTERCENSAL INCREASES.

State or Territory.	1881-1891.		1891-1901.		1901-1911.		1911-1921.	
	Numerical.	Per cent.	Numerical.	Per cent.	Numerical.	Per cent.	Numerical.	Per cent.
N.S. Wales ..	(a) 374,129	49.90	(a) 230,892	20.54	(a) 293,602	21.67	453,637	27.55
Victoria ..	278,274	32.30	61,230	5.37	114,481	9.53	215,729	16.40
Queensland ..	180,193	84.39	104,411	26.52	107,684	21.62	150,159	24.79
South Australia ..	39,119	14.15	42,813	13.57	50,212	14.01	86,602	21.20
Western Australia ..	20,074	67.57	134,342	269.86	97,990	53.22	50,618	17.94
Tasmania ..	30,962	26.76	25,808	17.60	18,736	10.86	22,569	11.80
N. Territory ..	1,447	41.93	(b) 87	(b) 1.78	(b) 1,501	(b) 31.20	557	16.83
Fed. Cap. Ter. ..	..	..	..	..	..	..	858	50.06
Australia ..	924,198	41.07	599,409	18.88	681,204	18.05	980,729	22.01

(a) Including Federal Capital Territory. (b) Decrease.

For Australia as a whole, the increase during the period 1911-1921 was greater by 299,525 than that for the period 1901-1911, the rate of increase being 22.01 per cent. for 1911-1921, as against 18.05 for 1901-1911. During the earlier period the increase corresponds to 1.67 per cent. per annum, and in the latter, to 2.01 per cent. per annum.

§ 4. Distribution and Fluctuation of Population.

1. *Present Number.*—The population of Australia on the 31st December, 1929, was estimated at 6,414,372 persons, of whom 3,277,352, or 51.09 per cent., were males and 3,137,020, or 48.91 per cent., were females. The increase during the year 1929 was 77,586, equal to 1.22 per cent., males having increased by 35,817, or 1.10 per cent., and females by 41,769, or 1.35 per cent. Of the increase referred to, 68,623, or 88.45 per cent., was due to the excess of births over deaths, and 8,963, or 11.55 per cent., was due to the excess of immigration over emigration.

2. Growth and Distribution.—In issues of the Year Book up to No. 15, the male and female populations of Australia as a whole were given at quinquennial periods from 1788, but it is considered that the abridged table presented herewith will suffice for general purposes.

POPULATION.—1788 TO 1929.

Year.	Estimated Population at end of Year.								Australia.
	States.						Territories.		
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern.	Federal Capital.	

MALES.

(a) 1800	3,780	..	..	..	..	..	..	..	3,780
1810	7,585	..	..	..	..	..	..	..	7,585
1820	23,784	..	..	..	..	..	..	..	23,784
1830	33,900	..	..	..	877	(b)13,108	..	..	52,885
1840	85,560	..	..	8,272	1,434	32,040	..	..	127,306
1850	154,976	..	..	35,902	3,576	44,229	..	..	238,683
1860	197,851	(b)330,302	(b)16,817	64,340	9,597	49,653	..	..	668,560
1870	272,121	397,230	69,221	94,894	15,511	53,517	..	..	902,494
1880	404,952	450,558	124,013	147,438	16,985	60,568	..	..	1,204,514
1890	602,704	595,519	223,252	166,049	28,854	76,453	..	..	1,692,831
1900	716,047	601,773	274,684	180,349	110,088	89,763	(c)4,288	..	1,976,992
1910	858,181	646,482	325,513	206,557	157,971	98,866	2,738	..	2,296,308
1920	1,007,945	753,803	396,555	245,300	176,895	107,259	2,911	(b)1,062	2,751,730
1929	1,261,133	881,650	493,030	299,641	225,861	108,473	2,945	4,619	3,277,352

FEMALES.

(a) 1800	1,437	..	..	..	..	..	..	..	1,437
1810	3,981	..	..	..	..	..	..	..	3,981
1820	9,759	..	..	..	..	..	..	..	9,759
1830	10,688	..	..	..	295	(b)6,171	..	..	17,154
1840	41,908	..	..	6,358	877	13,959	..	..	63,102
1850	111,924	..	..	27,798	2,310	24,641	..	..	166,673
1860	150,695	(b)207,932	(b)11,239	61,242	5,749	40,168	..	..	477,025
1870	225,871	326,695	46,051	89,652	9,624	47,369	..	..	745,262
1880	336,190	408,047	87,027	128,955	12,576	54,222	..	..	1,027,017
1890	510,571	538,209	168,864	152,898	19,648	63,334	..	..	1,458,524
1900	644,258	594,440	219,163	176,901	69,879	83,137	(c)569	..	1,788,347
1910	785,674	654,926	273,503	200,311	118,861	94,937	563	..	2,128,775
1920	1,023,777	774,106	354,069	245,706	154,428	105,493	1,078	(b)910	2,659,567
1929	1,216,452	895,415	437,841	280,630	190,902	110,592	1,525	3,663	3,137,020

PERSONS.

1788	859	..	..	..	..	..	..	..	859
1790	2,056	..	..	..	..	..	..	..	2,056
1800	5,217	..	..	..	..	..	..	..	5,217
1810	11,566	..	..	..	..	..	..	..	11,566
1820	33,543	..	..	..	..	..	..	..	33,543
1830	44,588	..	..	..	1,172	(b)24,279	..	..	70,039
1840	127,468	..	..	14,630	2,311	45,999	..	..	190,408
1850	266,900	..	..	63,700	5,886	68,870	..	..	405,356
1860	348,546	(b)538,234	(b)28,056	125,582	15,346	89,821	..	..	1,145,585
1870	497,992	723,925	115,272	184,546	25,135	100,886	..	..	1,647,756
1880	741,142	858,605	211,040	276,393	29,561	114,790	..	..	2,231,531
1890	1,113,275	1,133,728	392,116	318,947	48,502	144,787	..	..	3,151,355
1900	1,360,305	1,196,213	493,847	357,250	179,967	172,900	(c)4,857	..	3,765,339
1910	1,643,855	1,301,408	599,016	406,868	276,832	193,803	3,301	..	4,425,083
1920	2,091,722	1,527,909	750,624	491,006	331,323	212,752	3,989	(b)1,972	5,411,297
1929	2,477,585	1,777,065	930,871	580,271	416,763	219,065	4,470	8,282	6,414,372

(a) Details as to sex not available for earlier decennial dates.

(b) Previously included with

New South Wales.

(c) Previously included with South Australia.

The growth of the population of Australia and of each State thereof, is illustrated by the graphs accompanying this chapter.

3. Mean Population.—The following table shows the mean population for each State and Territory for the year 1929.

MEAN POPULATION, EXCLUSIVE OF FULL-BLOOD ABORIGINALS.

Year.	States.						Territories.		Australia.
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern.	Fed. Cap.	
1929 ..	2,462,922	1,769,126	924,864	579,503	411,437	213,763	4,178	8,384	6,374,177

4. Area, Population, Masculinity, and Density—States, 1929.—A previous table showed the estimated number of persons on the 31st December, 1929, in each of the States and Territories. In the following table the proportions of the total area, and of the total population represented by each State or Territory, are given, together with the masculinity and the density of population :—

AREA, POPULATION, MASCULINITY, AND DENSITY.—STATES, 1929.

State or Territory.	Percentage on Total Area.	Per cent. Estimated Population 31st December, 1929.			Masculinity. (a)	Density. (b)
		Males.	Females.	Persons.		
New South Wales ..	10.40	38.48	38.78	38.63	1.80	8.01
Victoria ..	2.96	26.90	28.54	27.70	—0.77	20.22
Queensland ..	22.54	15.05	13.96	14.51	5.93	1.39
South Australia ..	12.78	9.14	8.95	9.05	3.28	1.52
Western Australia ..	32.81	6.89	6.08	6.50	8.39	0.43
Tasmania ..	0.88	3.31	3.52	3.41	—0.97	8.36
Northern Territory ..	17.60	0.09	0.05	0.07	31.77	0.01
Federal Capital Territory ..	0.03	0.14	0.12	0.13	11.54	8.81
Australia ..	100.00	100.00	100.00	100.00	2.19	2.16

(a) Excess of males over females in each 100 persons.

(b) Number of persons per square mile.

NOTE.—The minus sign (—) indicates excess of females over males in each 100 persons.

5. Urban and Rural Distribution.—At the Census of 4th April, 1921, information was obtained regarding the distribution of the population amongst urban and rural areas. The metropolitan divisions include the capital city and the adjoining urban areas; the urban provincial districts cover those cities and towns which are not adjacent to the metropolitan areas, and which are incorporated for local government purposes; while those persons classed as migratory were mostly on board ships in Australian ports.

The results show that of the 5,435,734 persons recorded at the Census, 2,338,079, or 43.01 per cent., resided in the metropolitan divisions; 1,037,468, or 19.09 per cent., in urban provincial areas; 2,030,422 persons, or 37.35 per cent., in rural areas; and the remainder 29,765, or 0.55 per cent., were classed as migratory. More detailed information in connexion with this matter will be found in Official Year Book, No. 22, p. 890.

6. Metropolitan Population—Australia and Other Countries.—The abnormal concentration of population in the capitals of the States of Australia, as compared with other countries, may be readily seen from the following table. It may be mentioned, however, that, in most of the European countries, the capital is not always the most populous of many big cities, whereas, in Australia, the capital is invariably the most populous city, and in some States is the only town of important magnitude.

METROPOLITAN POPULATION.—AUSTRALIA AND OTHER COUNTRIES.

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
New South Wales ..	Sydney ..	31st Dec., 1929	1,238,660	49.99
Victoria ..	Melbourne ..		1,018,200	57.30
Queensland ..	Brisbane ..		318,631	34.23
South Australia ..	Adelaide ..		324,898	55.99
Western Australia ..	Perth ..		202,888	48.68
Tasmania ..	Hobart ..		57,500	26.25
Australia ..	(6 Cities) ..	1.4.1930	3,160,777	49.28
New Zealand ..	Wellington ..		138,050	9.27
New York State ..	New York ..	1928	6,017,702	52.10
Northern Ireland ..	Belfast ..	1927	415,000	33.11
Austria ..	Vienna ..	1928	1,855,362	27.75
Denmark ..	Copenhagen ..	1925	731,496	21.30
Irish Free State ..	Dublin ..	1928	422,200	14.33
England ..	London (a) ..	1929	4,417,900	11.15
Belgium ..	Brussels ..	1928	825,783	10.33
Netherlands ..	Amsterdam ..	1928	743,404	9.62
Norway ..	Oslo ..	1927	251,510	8.99
Scotland ..	Edinburgh ..	1929	429,600	8.77
Sweden ..	Stockholm ..	1928	474,094	7.77
France ..	Paris ..	1926	2,871,429	7.05
Germany ..	Berlin ..	1925	4,024,165	6.37
Spain ..	Madrid ..	1928	816,928	3.61
Japan ..	Tokio ..	1925	1,995,567	3.34
Italy ..	Rome ..	1929	914,631	2.22
Russia (European) ..	Leningrad ..	1926	1,614,008	1.10
United States ..	Washington ..	1928	552,000	0.46

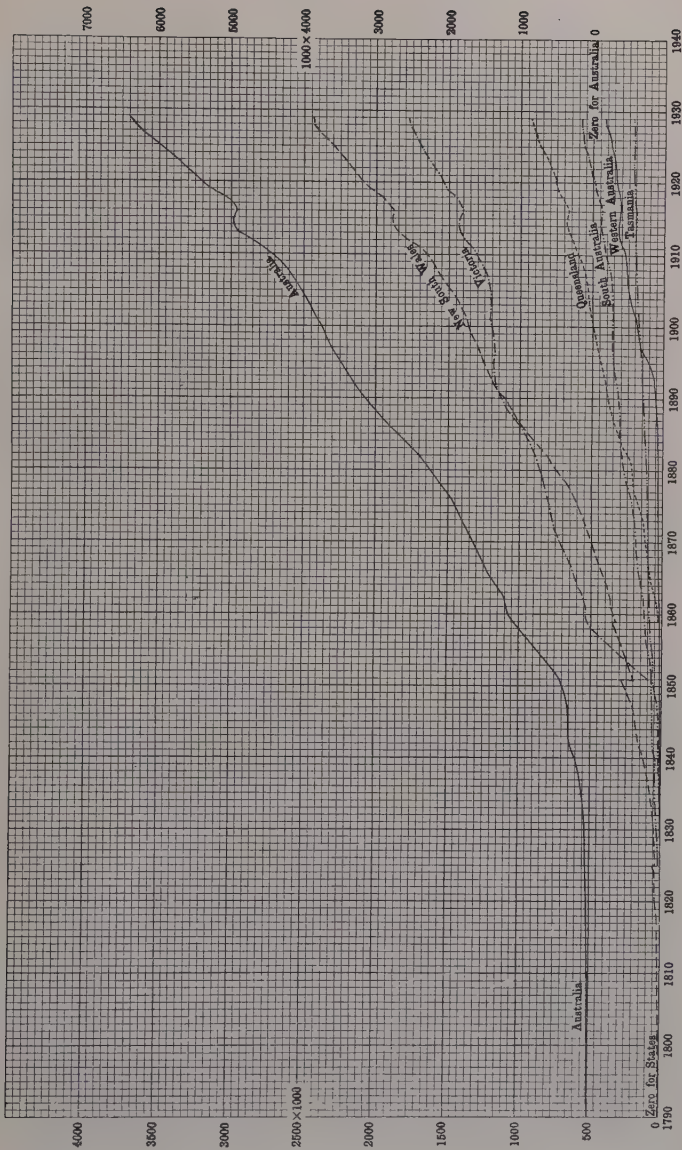
(a) Population of Greater London in 1929 was 7,834,370.

7. Principal Urban Centres.—The following table gives particulars of the population of the principal urban incorporated areas in each State at the 31st December, 1929 :—

POPULATION OF PRINCIPAL URBAN INCORPORATED AREAS.—AUSTRALIA,
31st DECEMBER, 1929.

Town.	Population.	Town.	Population.
New South Wales—		Queensland—continued.	
Sydney and Suburbs ..	1,238,660	Ipswich ..	26,053
Newcastle and Suburbs ..	104,640	Maryborough ..	12,000
Broken Hill ..	23,480	Bundaberg ..	11,250
Lithgow ..	15,320	Gympie ..	9,800
Holroyd ..	14,420	Cairns ..	9,750
Cessnock ..	14,120	Charters Towers ..	9,200
Goulburn ..	12,740	Mackay ..	9,120
Wollongong ..	10,230	Warwick ..	7,000
Katoomba ..	10,100	Southport ..	5,600
Lismore ..	10,050	South Australia—	
Albury ..	9,580	Adelaide and Suburbs ..	324,898
Bathurst ..	9,510	Port Pirie ..	9,527
Wagga Wagga ..	9,030	Mount Gambier ..	3,942
Orange ..	8,610	Murray Bridge ..	3,562
Tamworth ..	7,890	Victor Harbour ..	3,430
West Maitland ..	7,770	Wallaroo ..	3,097
Fairfield ..	7,570	Western Australia—	
Armidale ..	7,270	Perth and Suburbs ..	202,888
Illawarra Central ..	7,190	Boulder ..	5,432
Victoria—		Bunbury ..	5,070
Melbourne and Suburbs ..	1,018,200	Kalgoorlie ..	5,300
Geelong and Suburbs ..	43,580	Northam ..	4,935
Ballarat and Suburbs ..	42,200	Geraldton ..	4,790
Bendigo and Suburbs ..	33,700	Albany ..	3,980
Warrnambool ..	8,200	Collie ..	3,720
Castlemaine and Suburbs ..	7,170	Narrogin ..	3,250
Wonthaggi ..	7,000	Tasmania—	
Mildura ..	6,100	Hobart and Suburbs ..	57,500
Queensland—		Launceston and Suburbs ..	29,200
Brisbane and Suburbs ..	318,631	Devonport ..	5,000
Townsville ..	31,300	Burnie ..	4,000
Rockhampton ..	30,000	Queenstown ..	3,250
Toowoomba ..	25,570	Ulverstone ..	2,800

TOTAL POPULATION, 1788 TO 1929.

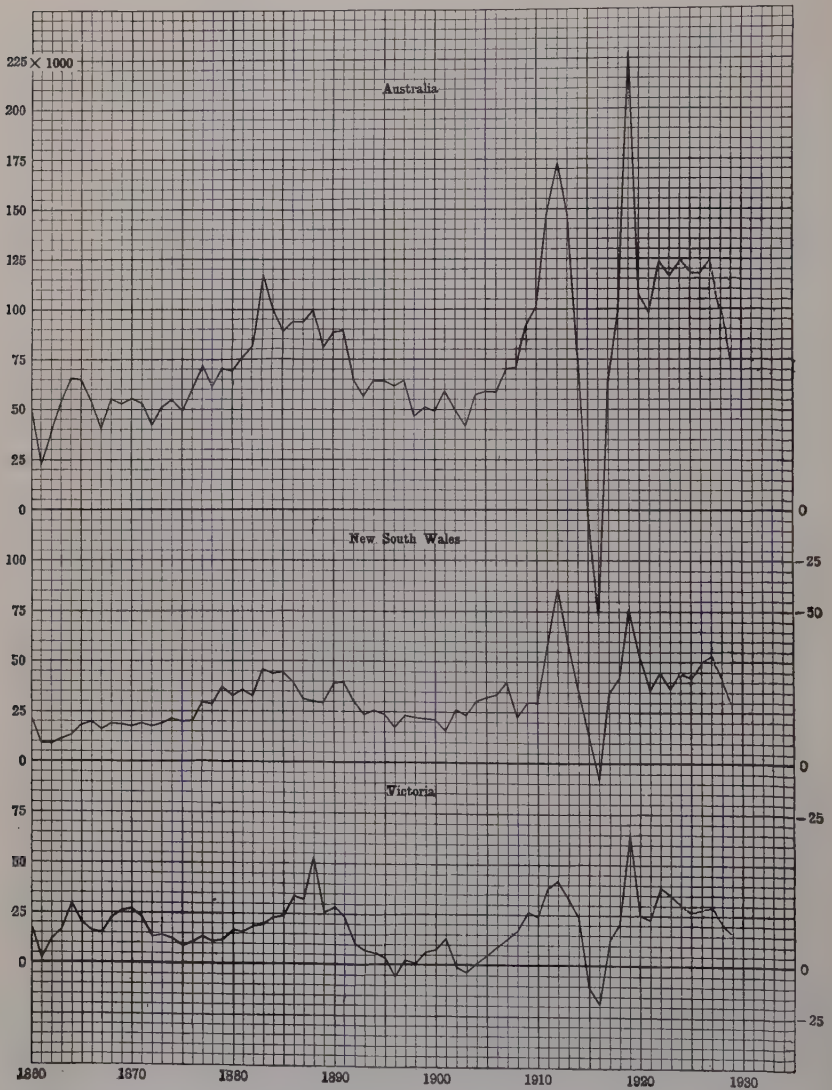


(See page 664.)

EXPLANATION.—The base of each small square represents one year's interval for the States and Australia, and the vertical height for the States 50,000 persons, and for Australia 100,000 persons.

Where the population falls suddenly, the fall denotes the creation of a new colony, e.g., New South Wales in 1825 lost the whole population of Tasmania.

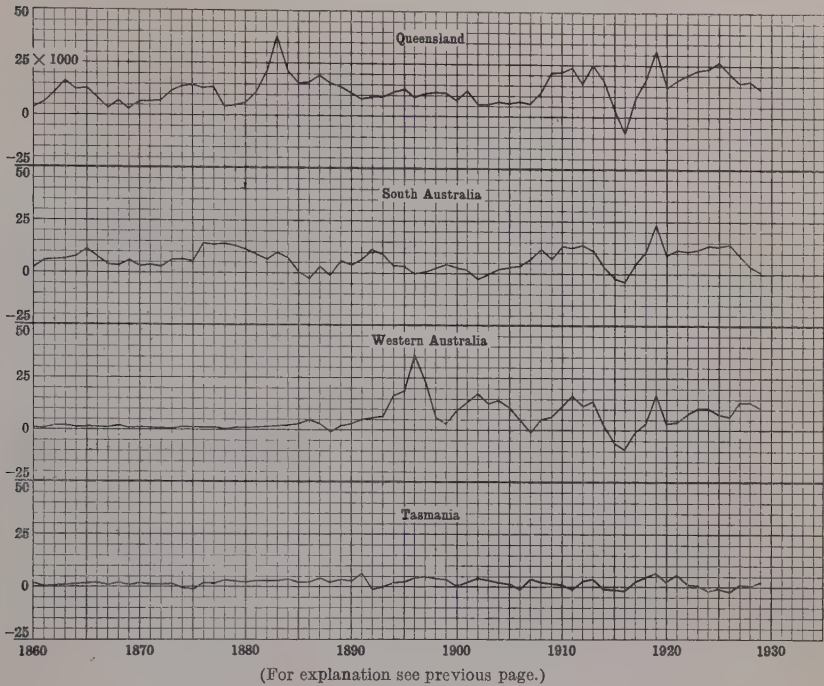
TOTAL INCREASE OF POPULATION—AUSTRALIA, AND NEW SOUTH WALES AND
VICTORIA, 1860 TO 1929.



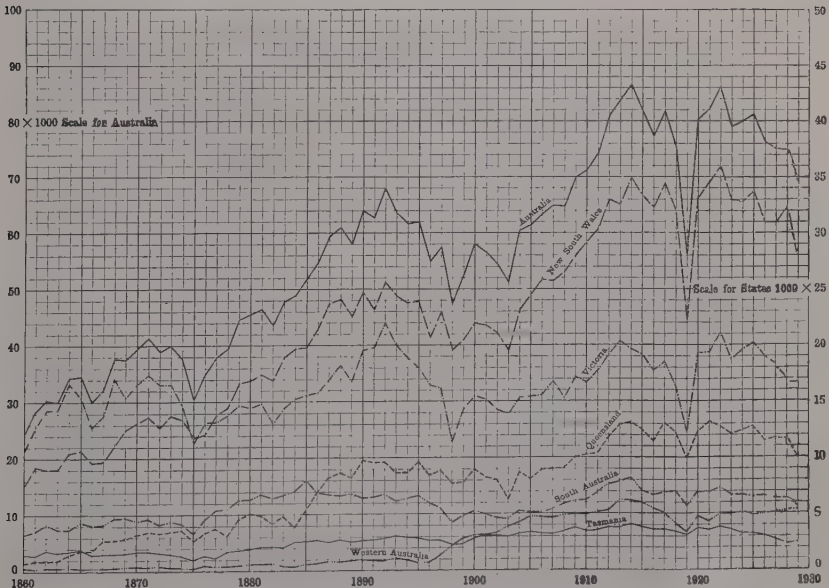
EXPLANATION.—The base of each small square represents an interval of a year for both States and Australia; the vertical height represents 5,000 persons. In the first graph three zero lines are taken (i) for Australia, (ii) for New South Wales, and (iii) for Victoria. In the second graph (on page 669) four zero lines are taken (i) for Queensland, (ii) for South Australia, (iii) for Western Australia, and (iv) for Tasmania.

DECREASES in population are shown by carrying the curve in such cases below the zero line, the distance below the zero line indicating the extent of the decrease.

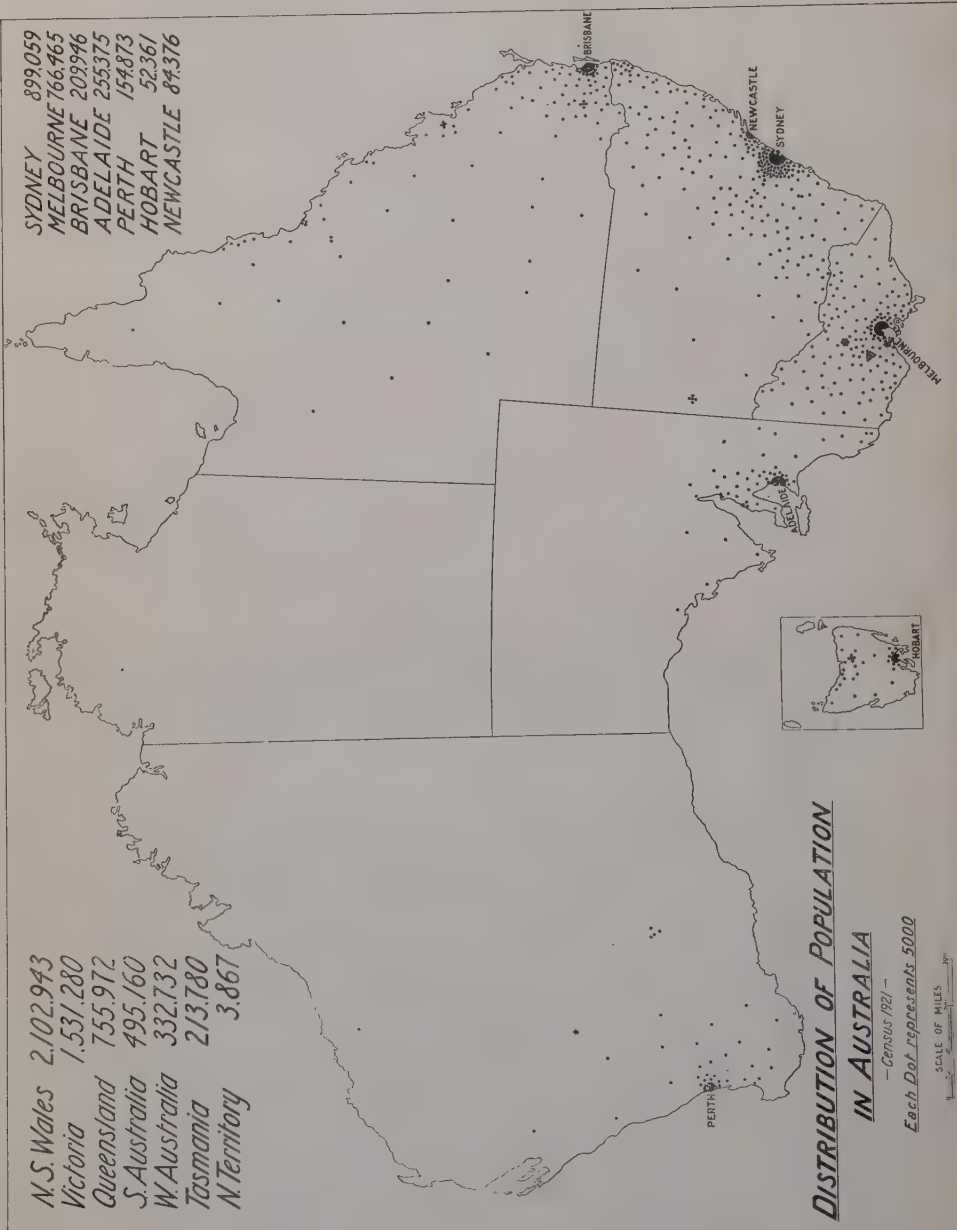
TOTAL INCREASE OF POPULATION.—QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860 TO 1929.



NATURAL INCREASE OF POPULATION 1860 TO 1929.



EXPLANATION.—The base of each small square represents one year for both States and Australia, and the vertical height 1,000 persons for the States and 2,000 persons for Australia. The distances upward from the zero line, marked 0 for both Australia and States, denote the excess of births over deaths. The scale on the left relates to Australia, and the one on the right to the States.



FULL-BLOODS

N.S.Wales	965
Victoria	55
Queensland	13,500
S. Australia	2,150
W. Australia	23,000
N. Territory	20,250

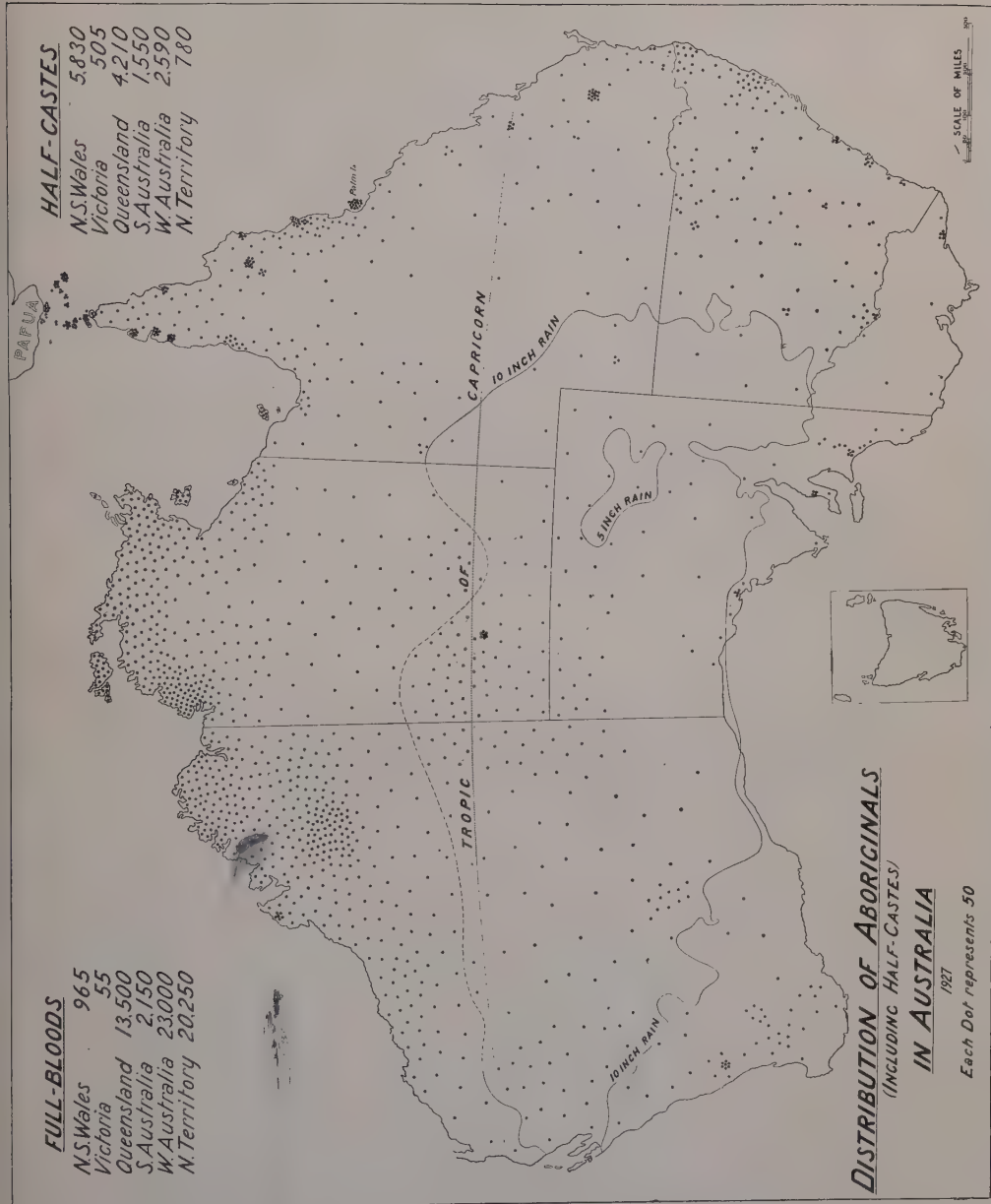
HALF-CASTES

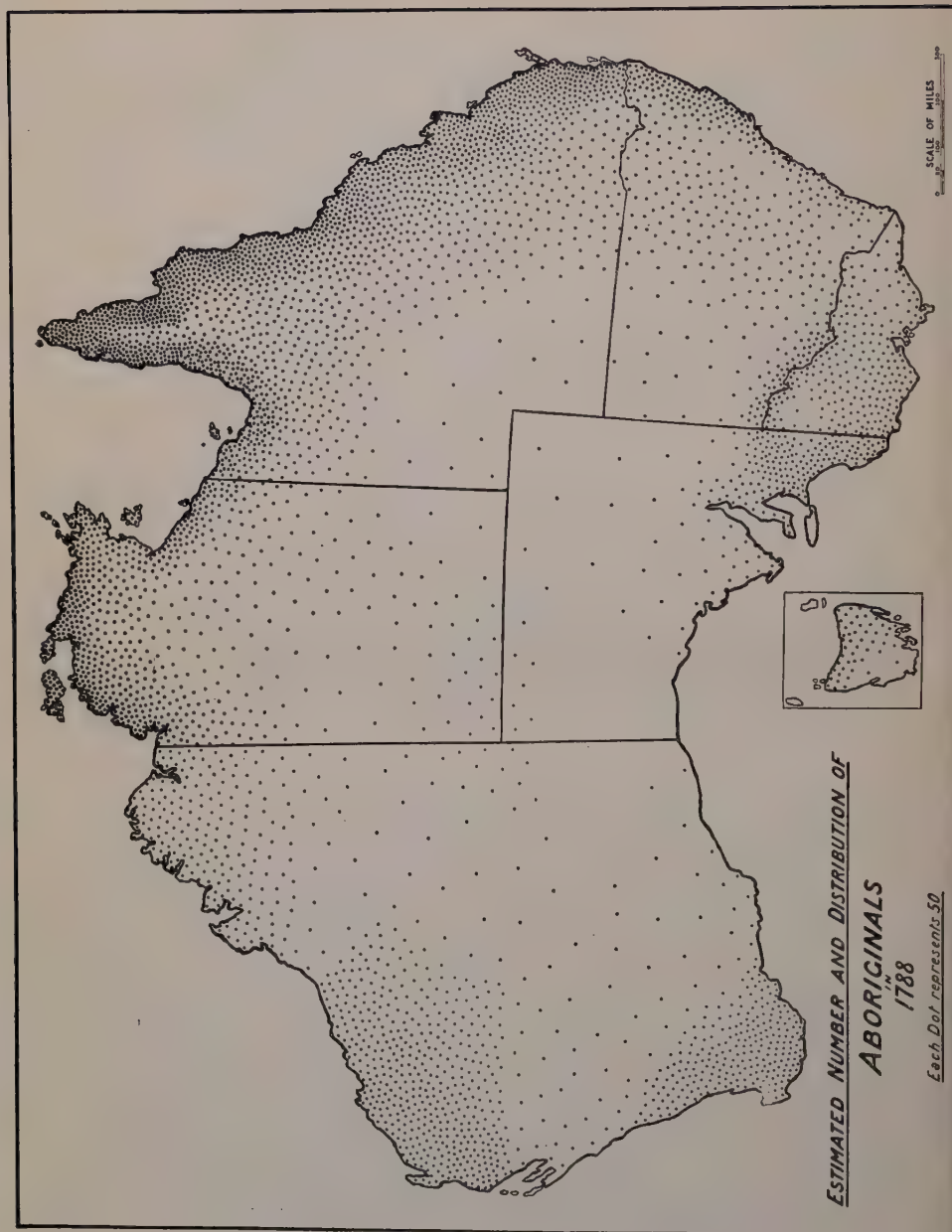
N.S.Wales	5,830
Victoria	505
Queensland	4,210
S. Australia	1,550
W. Australia	2,590
N. Territory	780

DISTRIBUTION OF ABORIGINALS
(INCLUDING HALF-CASTES)
IN AUSTRALIA

1927

Each Dot represents 50





§ 5. Elements of Increase.

1. **Natural Increase.**—(i) *General.* The two factors which contribute to the growth of a population are the “natural increase” by excess of births over deaths, and the “net immigration,” i.e., the excess of arrivals over departures. In previous issues of the Official Year Book particulars of the natural increase from 1861 were given for each sex and State. In the following table the last three years only are given. The natural increase for Australia from 1861 to 1929 inclusive was 3,955,080, consisting of 1,835,457 males and 2,119,623 females, and represented 75.07 per cent. of the total increase in population. A graph showing the natural increase to the population of each State and of Australia, from year to year since 1861, accompanies this chapter.

POPULATION.—NATURAL INCREASE (a), 1927 TO 1929.

Period.	States.						Territories.		Australia.	
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed. Cap.		
MALES.										
1927	..	14,825	9,086	5,351	3,092	2,251	1,441	— 37	13	36,022
1928	..	15,505	8,421	5,499	3,045	2,264	1,263	— 27	37	36,007
1929	..	13,046	8,263	4,430	2,725	2,076	1,334	— 25	56	31,905
FEMALES.										
1927	..	16,265	9,215	6,404	3,272	2,838	1,359	29	12	39,394
1928	..	16,629	8,369	6,308	3,216	2,800	1,296	39	36	38,693
1929	..	15,043	8,624	5,747	2,901	3,045	1,287	13	58	36,718
PERSONS.										
1927	..	31,090	18,301	11,755	6,364	5,089	2,800	— 8	25	75,416
1928	..	32,134	16,790	11,807	6,261	5,064	2,559	12	73	74,700
1929	..	28,089	16,887	10,177	5,626	5,121	2,621	— 12	114	68,623

(a) Excess of births over deaths.

NOTE.—Minus sign (—) denotes excess of deaths over births.

(ii) *Comparison with other Countries.* Notwithstanding its comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is very low. The following table gives a comparison between the average rates per annum of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of Australia and the Dominion of New Zealand:—

NATURAL INCREASE PER ANNUM PER 1,000 OF MEAN POPULATION.

(VARIOUS COUNTRIES.)

Country.	Natural Increase per 1,000.	Country.	Natural Increase per 1,000.
Australasia (1925-29)—		Europe—continued.	
Tasmania ..	13.5	Scotland ..	(b) 6.3
New South Wales ..	13.2	Irish Free State ..	(b) 6.0
Queensland ..	13.0	Switzerland ..	(b) 5.8
Western Australia ..	12.9	Belgium ..	(b) 5.6
Australia ..	12.2	England and Wales ..	(b) 4.6
New Zealand ..	11.5	Sweden ..	(b) 4.6
South Australia ..	11.1	France ..	(b) 1.5
Victoria ..	10.6		
Europe—		Asia—	
Soviet Republics ..	(a) 22.3	Japan ..	(b) 14.6
Netherlands ..	(b) 13.8		
Italy ..	(b) 13.2	Africa—	
Spain ..	(b) 10.5	Union of South Africa	
Denmark ..	(b) 9.1	(whites only) ..	(b) 16.4
Norway ..	(b) 8.1		
Germany ..	(b) 7.5	America—	
Northern Ireland ..	(b) 6.7	Canada ..	(b) 14.4
		United States ..	(b) 8.7

(a) 1926-27.

(b) 1925-28.

Graphs of natural increase for each of the States, as well as for Australia, accompany this chapter.

2. **Net Immigration.***—The other factor of increase in the population, viz., the excess of arrivals over departures, known as “net immigration” is, from its nature, much more subject to variations than is the factor of “natural increase.” These variations are due to numerous causes, some of which are referred to in Official Year Book No. 22, pp. 906-7.

POPULATION.—INCREASE BY NET IMMIGRATION, 1927 TO 1929.

Period.	States.						Territories.		Australia.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Fed. Cap.	

MALES.

1927 ..	12,592	5,924	4,152	2,324	6,167	— 735	401	395	31,220
1928 ..	6,753	— 381	4,644	— 1,628	6,317	— 928	— 371	1,299	15,705
1929 ..	1,853	— 2,062	3,310	— 2,763	3,576	— 232	231	— 1	3,912

FEMALES.

1927 ..	8,803	5,338	1,076	689	2,290	— 957	70	395	17,704
1928 ..	6,127	3,165	1,062	— 1,056	2,200	— 930	— 20	979	11,527
1929 ..	2,363	1,276	695	— 1,940	2,193	113	269	82	5,051

* The subject of immigration is dealt with at some length later in this chapter.

NOTE.—Minus sign (—) indicates the excess of departures over arrivals.

POPULATION.—INCREASE BY NET IMMIGRATION, 1927 TO 1929—*continued.*

Period.	States.						Territories.		Australia.	
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed. Cap.		
PERSONS.										
1927	..	21,395	11,262	5,228	3,013	8,457	— 1,692	471	790	48,924
1928	..	12,880	2,784	5,706	— 2,684	8,517	— 1,858	391	2,278	27,232
1929	..	4,216	— 786	4,005	— 4,703	5,769	— 119	500	81	8,963

NOTE.—Minus sign (—) indicates the excess of departures over arrivals.

A table showing the increase by net immigration since 1861 was given in previous issues, but limitations of space prevent its repetition here.

From 1861 to 1929 the increment to the population arising from net immigration amounted to 1,313,707 or 24.93 per cent. of the total increase in population. During the 29 years of the present century the total increase to the population was made up of 2,101,315 or 79.32 per cent. by natural increase, and 547,718 or 20.68 per cent. by net immigration.

3. **Total Increase.**—The total increase of the population is obtained by the combination of the natural increase with the net immigration.

The total increase in each decade from 1861 to 1920 and for the years 1921 to 1928 was given in Year Book No. 22, p. 902. The results for the last three years only are shown below, while a graph showing the increase in the population in each State and Territory, and of Australia from 1860, accompanies this chapter.

POPULATION.—TOTAL INCREASE, 1927 TO 1929.

Period.	States.						Territories.		Australia.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed. Cap.	
MALES.									
1927 ..	27,417	15,010	9,503	5,416	8,418	706	364	408	67,242
1928 ..	22,258	8,040	10,143	1,417	8,581	335	398	1,336	51,712
1929 ..	14,899	6,201	7,740	— 38	5,652	1,102	206	55	35,817

FEMALES.									
1927 ..	25,068	14,553	7,480	3,961	5,128	402	99	407	57,098
1928 ..	22,756	11,534	7,370	2,160	5,000	366	19	1,015	50,220
1929 ..	17,406	9,900	6,442	961	5,238	1,400	282	140	41,769

PERSONS.									
1927 ..	52,485	29,563	16,983	9,377	13,546	1,108	463	815	124,340
1928 ..	45,014	19,574	17,513	3,577	13,581	701	379	2,351	101,932
1929 ..	32,305	16,101	14,182	923	10,890	2,502	488	195	77,586

NOTE.—Minus sign (—) denotes decrease.

4. *Rates of Increase.*—(i) *For Various Countries.* The table hereunder gives approximate rates of increase in population for Australia, and its component States, and for other countries :—

POPULATION.—RATES OF INCREASE (VARIOUS COUNTRIES), 1891 TO 1929.

Countries.	Annual Rate of Increase in Population during period—							
	1891 to 1896.	1896 to 1901.	1901 to 1906.	1906 to 1911.	1911 to 1916.	1916 to 1921.	1921 to 1926.	1929.
AUSTRALASIA—	%	%	%	%	%	%	%	%
Australia ..	1.86	1.49	1.38	2.03	1.95	1.99	2.09	1.22
New South Wales	1.99	1.57	1.99	2.03	2.61	2.17	2.01	1.32
Victoria ..	0.37	0.52	0.18	2.17	1.38	1.68	2.00	0.91
Queensland ..	2.49	2.25	1.35	2.76	2.20	2.21	2.81	1.55
South Australia <i>b</i>	1.63	0.77	0.27	2.46	1.52	2.34	2.27	0.24
Western Australia	20.81	7.25	6.22	2.43	1.76	1.27	2.44	2.68
Tasmania ..	1.06	1.83	1.33	0.65	0.58	1.84	-0.33	1.16
New Zealand ..	2.41	1.98	2.86	2.56	1.61	2.32	1.95	1.24
EUROPE—								
England and Wales	1.15	1.15	1.04	1.04	-0.95	1.89	0.62	0.32
Scotland ..	1.06	1.06	0.55	0.56	0.31	0.24	0.09	0.08
Ireland ..	-0.60	-0.43	-0.22	-0.06	-0.21	0.58	-0.60	<i>c</i> -0.33
Belgium ..	1.15	0.92	1.26	0.69	0.54	-0.56	1.03	(<i>c</i>) 0.80
Denmark ..	0.99	1.32	1.12	1.26	1.20	2.13	1.01	(<i>c</i>) 0.58
France ..	0.09	0.24	0.15	0.06	-0.72	0.55	0.76	(<i>c</i>) 0.15
Germany ..	1.17	1.51	1.46	1.36	0.71	-1.62	0.73	(<i>c</i>) 0.58
Italy ..	0.68	0.61	0.52	0.80	1.16	0.22	0.91	0.82
Netherlands ..	1.28	1.30	1.53	1.22	1.72	1.16	1.53	1.33
Norway ..	0.96	1.31	0.52	0.66	1.00	1.14	0.90	(<i>c</i>) 0.81
Spain ..	0.45	0.45	0.52	0.87	0.66	0.82	0.65	(<i>c</i>)
Sweden ..	0.61	0.86	0.61	0.84	0.70	0.64	0.40	(<i>c</i>) 0.28
Switzerland ..	1.22	1.10	1.28	1.17	0.81	0.01	0.38	(<i>c</i>) 0.82
ASIA—								
Ceylon ..	1.41	2.03	1.62	1.20	1.71	1.28	2.30	(<i>c</i>) 2.52
Japan ..	0.96	1.25	1.29	1.08	1.42	0.37	1.42	(<i>c</i>) 1.51
AMERICA—								
Canada ..	0.97	1.19	2.99	2.99	2.20	1.81	1.33	1.43
United States ..	1.93	2.02	2.00	1.82	1.67	1.21	1.67	(<i>c</i>) 1.01

(a) Including Federal Capital Territory.

(b) Including Northern Territory.

(c) Year 1928.

NOTE.—The minus sign (—) denotes decrease.

(ii) *Variations in the Rates.* The fluctuations in the rates of increase in the population of Australia are, for the greater part, due to variations in the volume of immigration.

§ 6. Seasonal Variations of Population.

1. *Variations in Natural Increase.*—The following table shows the natural increase to the population, during each quarter of the year, based on the experience of the ten years 1920-1929. For Australia as a whole, the rate of natural increase was greatest in the quarter ended 31st March, and least in the quarter ending 30th September, the difference between the rates of increase for these two periods being equal to 21 persons for every 100,000 of the population. In New South Wales, Victoria, South Australia, and Western Australia the March quarter was the most favourable, in Queensland the June quarter, and in Tasmania the September quarter. The natural increase was lowest in New South Wales, Victoria, and South Australia in the September quarter, in Queensland and Western Australia in the December quarter, and in Tasmania in the June quarter. The differences between the least favourable and the most favourable quarters ranged from 22 per 100,000 of the population in Tasmania to 35 per 100,000 in Queensland.

POPULATION.—AVERAGE QUARTERLY NATURAL INCREASE, 1920 TO 1929.

State or Territory.	Average Natural Increase for Quarter ended on last day of—								Average Natural Increase per Annum, 1920-29.	
	March.		June.		September.		December.			
	Persons.	%	Persons.	%	Persons.	%	Persons.	%	Persons.	%
N.S.W.	8,387	3.74	8,075	3.58	7,952	3.51	8,144	3.58	32,558	14.41
Victoria	4,923	3.00	4,660	2.83	4,559	2.76	4,791	2.89	18,933	11.48
Q'land.	3,068	3.71	3,159	3.78	2,964	3.52	2,892	3.43	12,083	14.44
S. Aust.	1,725	3.23	1,687	3.15	1,593	2.96	1,607	2.97	6,612	12.32
W. Aust.	1,255	3.47	1,247	3.43	1,220	3.33	1,188	3.22	4,910	13.45
Tas. . .	800	3.73	773	3.64	816	3.86	825	3.85	3,214	15.10
N. Ter.	4	1.03	2	0.51	2	0.51	2	-0.51	6	1.53
F.C. Ter.	8	1.85	10	2.00	11	2.13	8	1.67	37	7.51
Total	20,170	3.46	19,613	3.35	19,117	3.25	19,453	3.29	78,353	13.35

NOTE.—The minus sign (—) indicates an excess of deaths over births, and ‰ denotes "per thousand."

2. **Variations in Net Immigration.**—In the following table the figures relating to the separate States and Territories include interstate migrants, but so far as these persons are concerned, the arrivals into any State are departures from some other State, so that they do not affect the figures shown for Australia as a whole, which, therefore, represent the oversea arrivals and departures. For the decade under review the December quarter showed the greatest rate of increase from migration.

The greatest gains in New South Wales, Victoria, South Australia and Tasmania have been in the December quarter. The gain to the southern States in the December quarter is due to oversea traffic and to tourists and sugar workers returning from Queensland, which loses heavily during the December quarter, but gains in the June quarter by tourists seeking the warmer winter climate. The June quarter has been most favourable to Queensland and Western Australia. The increase to Tasmania during the December quarter is from the influx of tourists from the mainland, but this is unfortunately more than counterbalanced by the consistent losses during each of the other quarters.

POPULATION.—AVERAGE QUARTERLY NET IMMIGRATION, 1920 TO 1929.

State or Territory.	Quarter ended on last day of—								Average Net Immigration per Annum, 1919-29.	
	March.		June.		September.		December.			
	Persons.	‰	Persons.	‰	Persons.	‰	Persons.	‰	Persons.	‰
N.S.W.	3,007	1.34	420	0.19	4,308	1.90	4,431	1.95	11,326	5.01
Victoria	3,103	1.89	543	0.33	2,263	1.37	3,648	2.20	8,471	5.14
Q'land.	1,681	2.03	7,286	8.73	1,158	1.38	-2,734	3.24	7,391	8.83
S. Aust.	568	1.06	39	0.07	736	1.37	2,004	3.71	3,269	6.09
W. Aust.	837	2.32	1,308	3.59	1,016	2.77	818	2.22	3,979	10.90
Tas. . .	-3,515	-16.37	-2,762	-13.00	-931	-4.41	4,914	22.95	-2,294	-10.78
N. Ter.	10	-2.58	31	7.95	18	4.59	-53	-13.57	14	-3.59
F.C. Ter.	1,265	292.97	91	18.18	226	43.69	-983	-204.59	599	121.65
Total	6,936	1.19	4,952	0.85	8,794	1.50	12,045	2.04	32,727	5.58

NOTE.—The minus sign (—) denotes excess of departures over arrivals, and ‰ denotes "per thousand" of population.

§ 7. Influences affecting Increase and Distribution.

In previous issues of the Official Year Book the influence of the various factors influencing the growth and distribution of population was traced. Detailed information on this subject will be found in Year Book No. 22, pp. 906 and 907.

§ 8. Density.

1. **General.**—From certain aspects population may be less significant in respect of its absolute amount than in its relation to the area of the country. Australia, with an area of 2,974,581 square miles, and a population on 31st December, 1929, of 6,474,372 including aboriginals, has a density of only 2.18 persons to the square mile, and is, therefore, the most sparsely populated of the civilized countries of the world. For the other continents the densities are approximately as follows:—Europe, 130; Asia, 62; Africa, 12; North and Central America, 19; and South America, 11. The population of Australia has thus about 20 per cent. of the density of South America; about 18 per cent. of that of Africa; about 11 per cent. of that of North and Central America; about 3 per cent. of that of Asia; and about 2 per cent. of that of Europe.

A map showing the density of population throughout Australia at the Census of 1921 accompanies this chapter.

Particulars concerning the number and density of the population of the most important countries of the world at the latest dates for which such information is available are given in the following table. These figures have in the main been taken from the 1930 issue of the "Statesman's Year Book," and in some instances, more particularly in the cases of Asia and Africa, must be considered as rough approximations only, complete data not being obtainable.

POPULATION, WORLD'S.—NUMBER AND DENSITY.

Country.	Population.	Density (a).	Country.	Population.	Density (a).
EUROPE.			AFRICA—continued.		
Russia	112,600,000	63.78	Abyssinia	10,000,000	28.57
Germany	63,178,619	337.44	Belgian Congo	8,723,276	9.49
Great Britain and North- ern Ireland	45,754,000	483.49	Union of South Africa	7,777,583	16.46
Italy	41,169,000	338.26	Anglo-Egyptian Sudan	5,483,889	5.44
France	41,020,000	192.89	Algeria	6,063,496	7.15
Poland	30,403,247	202.78	Total Africa	134,499,277	11.83
Spain (including Canary and Balearic Islands)	22,601,753	116.03	NORTH AND CENTRAL AMERICA.		
Rumania	17,393,149	142.24	United States of America	120,013,000	39.65
Czecho-Slovakia	14,535,429	268.15	Mexico	14,899,905	19.42
Jugo-Slavia	13,290,000	138.24	Canada	9,786,800	2.66
Hungary	8,603,922	239.59	Cuba	3,579,507	81.05
Belgium	7,995,558	680.18	Total North and Central America	161,427,986	18.87
Netherlands	7,730,577	584.76	SOUTH AMERICA.		
Austria	6,686,576	203.57	Brazil	39,103,856	11.94
Greece	6,204,684	124.31	Argentine Republic	10,646,814	9.23
Sweden	6,105,190	35.26	Colombia	7,967,788	18.87
Portugal	6,032,991	169.99	Peru	6,147,000	11.55
Bulgaria	5,596,800	140.57	Chile	4,364,395	15.04
Total Europe	482,191,630	129.65	Total South America	79,332,806	11.22
ASIA.			OCEANIA, ETC.		
China and Dependencies	451,842,000	105.59	Australia	(b) 6,474,372	2.18
British India	247,003,293	225.72	New Zealand	1,485,564	14.30
Japan and Dependencies	83,456,929	314.78	Territory of New Guinea	460,869	5.16
Federatory Independent States	71,939,187	101.75	Hawaii	357,649	55.46
Dutch East Indies	52,824,569	92.19	Papua	276,523	3.05
Russia in Asia	37,000,000	5.71	Dutch New Guinea	195,460	1.22
Turkey, including Armenia and Kurdistan	12,615,969	44.21	Fiji	176,793	24.96
Philippine Islands	11,913,167	104.24	Total Oceania, &c.	9,964,346	2.88
Siam	10,284,000	53.36	SUMMARY.		
Persia	9,000,000	14.33	Europe	482,191,630	129.65
Afghanistan	8,000,000	32.65	Asia	1,050,963,964	62.00
Tonking	7,401,912	182.63	Africa	134,499,277	11.83
Arabia	7,000,000	7.00	America, North and Central	161,427,986	18.87
Nepal	5,600,000	103.70	America South	79,332,806	11.22
Ceylon	5,422,000	214.04	Oceania, etc.	9,964,346	2.88
Annam	5,339,674	135.81	Total	1,918,380,009	37.49
Total Asia	1,050,963,964	62.00			
AFRICA.					
Nigeria and Protectorate	18,966,574	56.50			
Egypt	14,213,364	37.11			
French West Africa	13,541,611	9.36			

(a) Number of persons per square mile.

(b) Including 60,000 aboriginals.

2. **Position of the British Empire.**—The approximate relationship of the British Empire to the world as a whole in regard to its area and population is given hereunder :—

BRITISH EMPIRE IN RELATION TO THE WORLD.

Particulars.	The World.	British Empire.
Area in square miles (exclusive of Polar Circles) ..	51,169,742	13,355,426
Population	1,918,380,009	458,205,000
Population per square mile	37.49	34.32

§ 9. General Characteristics.

1. **Sex Distribution**—(i) *General.* Detailed information respecting the distribution of the sexes in the population of Australia will be found in previous issues of the Official Year Book, but limitations of space preclude its retention in the present issue.

(ii) *Masculinity.* On pages 163 to 165 in the second issue of this publication a table was included showing the masculinity of the population of each of the States for each year from 1796 to 1907. In the fifth issue, on page 123, the figures in this table for the years 1901 to 1907 were modified in accordance with the results of the Census of 3rd April, 1911.

The ratio of the excess of males over females to the total population, expressed as a percentage, has been adopted as the "masculinity" of the population, and the ratios so computed for intervals of ten years from 1800 to 1910 and for the five years 1924 to 1928 appeared in Year Book No. 22, p. 911. The figures for 1929 will be found on p. 665 of this issue, as well as in the comparative table for various countries which follows.

Graphs showing the masculinity of the population of each State and of Australia, accompany this chapter.

The difference between young and old countries in the masculinity of their populations is clearly illustrated by the comparisons furnished in the following table, which are based on the latest statistics available.

POPULATION OF VARIOUS COUNTRIES.—MASCULINITY.

Country.	Year.	Excess of Males over Females in each 100 of Population.	Country.	Year.	Excess of Males over Females in each 100 of Population.
Argentine Republic ..	1928	6.57	Jugo-Slavia ..	1921	-1.92
Ceylon	1921	5.91	Denmark	1925	-2.39
British India	1921	2.73	Norway	1925	-2.64
India (Feudatory States)	1921	2.73	Spain	1920	-3.07
Australia	1929	2.19	Northern Ireland ..	1929	-3.36
Union of South Africa(a)	1928	2.02	Poland	1921	-3.37
New Zealand	1929	2.01	German Empire ..	1925	-3.47
United States of America	1920	1.98	Scotland	1929	-4.01
Irish Free State	1928	1.46	Great Britain and Northern Ireland ..	1929	-4.17
Japan	1928	0.97	England and Wales ..	1929	-4.21
Canada	1921	0.31	France	1921	-4.92
Belgium	1928	-1.04	Netherlands	1923	-7.29
Italy	1921	-1.37	Russia (European) ..	1920	-9.56
Sweden	1928	-1.74			

NOTE.—The minus sign (—) denotes excess of females over males in each 100 of population.

(a) White population only.

2. *Age Distribution.*—The age distribution of the population is obtained only at a Census, the last of which was taken in 1921. The data then collected have been included in preceding issues of the Year Book, but owing to limitations of space have been omitted from the present issue.

3. *Race and Nationality.*—(i) *General.* With regard to its racial characteristics the population of Australia may be divided into two main groups, one comprising the aboriginal natives, and the other consisting of the various immigrant races which have made the country their home. [It will of course be understood that full-blood aboriginals are not counted in the population.] The term “immigrant races” naturally covers not only those residents of Australia who were born in other countries, but includes their descendants who were born in Australia.

(ii) *Aboriginals.* At a Census of aboriginals taken on 30th June, 1929, 61,801 full-bloods were enumerated, of whom 37,023 were described as nomadic, 11,298 were in regular employment, and 9,561 were living in supervised camps. There were at the same date 16,629 half-castes. The aboriginals are scattered over the whole of the mainland, but the majority are concentrated chiefly in Western Australia, Queensland and North Australia.

A special article dealing with the number and distribution of aboriginals in Australia at the time of its first settlement will be found at the end of this chapter.

(iii) *Immigrant Races.* The immigrant races consist mainly of natives of the British Isles and their descendants. Of the total population (5,435,734) enumerated at the Census of 1921, 5,387,143, or 99.11 per cent., were of European race. Of the remainder, 30,975, or 0.57 per cent., were full-blood, and 17,616, or 0.32 per cent., were half-caste non-Europeans. Of 28,215 full-blood Asiatics, 17,157 were Chinese, 2,881 Hindus, 2,892 Syrians, 2,740 Japanese, and 1,087 Malays.

More detailed information under this heading will be found in previous issues of this book.

(iv) *Nationality.* Prior to the Census of 1921 no attempt had been made to ascertain the allegiance of the people, except in so far as a person was or was not a British subject. At the last Census all persons were asked to state their nationality, and the results which are given in the following table, show that of a population of 5,435,734, as many as 5,387,205, or over 99 per cent., were definitely stated to be British subjects. Of the foreign element, the Chinese were the most numerous, representing 30 per cent. of the foreign inhabitants and 2.56 in every 1,000 of the total population. Italians, with 0.90 per 1,000 of total population, were the next in numbers. (See Year Book No. 22, p. 917, for further information.)

(v) *Birthplaces.* The proportion of native-born in the Australian population has increased rapidly in recent years. At the Census of 1921 the Australian-born numbered 4,581,663 persons, or 84.51 per cent. of a total population of 5,421,242 persons whose birthplaces were specified. Of the remainder, 676,387, or 12.48 per cent., were natives of the British Isles, and 38,611, or 0.71 per cent., were natives of New Zealand, so that 97.70 of the total population at that time had been born either in Australasia or in the British Isles. Excluding these, the following countries are the most important recorded as the birthplaces of persons in Australia at the Census of 1921 :—

Germany, 22,396 (0.41 per cent.); China, 15,224 (0.28 per cent.); Scandinavia (comprising Sweden, Norway, and Denmark), 14,341 (0.26 per cent.); Italy, 8,135 (0.15 per cent.); British India, 6,918 (0.13 per cent.); United States of America, 6,604 (0.12 per cent.); Union of South Africa, 5,408 (0.10 per cent.); Canada, 3,550 (0.07 per cent.).

(vi) *Length of Residence of Immigrants.* At the Census of 1921 the population of Australia included 839,579 persons who were classed as immigrants. A table showing the number of years during which these people had resided in Australia will be found in previous issues of this Year Book.

4. **Education.**—Of the 5,435,734 persons who comprised the population of Australia on the 4th April, 1921, there were 805,798, of whom 600,206, or 74.5 per cent., were under five years of age, and many of the remaining 25.5 per cent. were also children, who were definitely shown to be unable to read, and there were 86,641 persons whose ability in this direction was not stated. Allowing for those persons whose ability to read and write was unspecified, it may be said that over 95 per cent. of the population over five years of age can read and write, and of those over ten years of age more than 98 per cent. can read and write.

5. **Religions.**—At the Census of the 4th April, 1921, of a total population of 5,435,734, 5,267,641, or 99.33 per cent. of those who stated their religion, were definitely stated to be Christians, and 35,405 were stated to be Non-Christians. Of the total Christians, 2,372,995, or 45.04 per cent., belonged to the Church of England; 1,134,002, or 21.53 per cent., to the Roman Catholic Church; 636,974, or 12.09 per cent., to the Presbyterian Church; and 632,629, or 12.01 per cent., were Methodists. The numbers belonging to other denominations will be found in Year Book No. 22, p. 921.

6. **Conjugal Condition.**—The number of persons whose conjugal condition was definitely stated at the Census of 4th April, 1921, was 5,421,191, of whom 2,753,740 were males and 2,667,451 were females. Of the 5,421,191 persons referred to, 1,098,662, or 36.86 per cent., were married, as compared with 33 per cent. in 1911; 237,821, or 4.39 per cent., were widowed; 8,528, or 0.15 per cent., were divorced; and 3,176,180, or 58.60 per cent., had never married. Of those who had never married, 1,725,004, or 54.31 per cent., were under 15 years of age.

7. **Occupations.**—Detailed information regarding the grouping of the population into occupations at the Census of 1921 will be found in previous issues of the Official Year Book. A brief summary only is included here.

POPULATION.—OCCUPATION AND PERCENTAGES OF EACH CLASS ON TOTAL BREADWINNERS, AUSTRALIA, CENSUSES 1901 TO 1921.

Occupations.	Persons.			Percentage on Total Breadwinners.		
	1901.	1911.	1921.	1901.	1911.	1921.
				%	%	%
I. Professional ..	112,356	146,608	201,887	6.8	7.3	8.7
II. Domestic ..	202,216	202,925	210,362	12.2	10.1	9.1
III. Commercial ..	224,028	291,366	355,767	13.6	14.5	15.3
IV. Transport and Communication	122,702	158,854	208,222	7.4	8.0	9.0
V. Industrial ..	429,012	569,132	725,816	26.1	28.4	31.2
VI. Primary Producers	535,766	608,843	599,750	32.5	30.4	25.8
VII. Independent ...	22,430	26,402	20,667	1.4	1.3	0.9
Total Breadwinners ..	1,648,510	2,004,130	2,322,471	100.0	100.0	100.0
VIII. Dependents ..	2,125,291	2,450,875	3,113,263			
Total ..	3,773,801	4,455,005	5,435,734			

8. **Grade of Employment.**—The term "grade of employment" indicates the capacity in which persons are employed in the various branches of industry. The grades recorded and the numbers of the population at the Census of 1921 in each grade were as follows:—(a) Employer (141,570), (b) Working on own account (347,250), (c) Assisting but not receiving wages or salary (34,983), (d) Receiving wages or salary (1,519,036), and (e) Unemployed (160,956). In addition to these categories, provision is made for (f) Grade not applicable (3,231,939)—which consists mainly of dependents and of persons of independent means not engaged in gainful occupations.

9. Unemployment.—(i) *Causes.* At the Census of the 4th April, 1921, there were in Australia 1,679,992 wage or salary earners, of whom 160,956 were unemployed. In 79,338 cases, or approximately 50 per cent. of the total, the unemployment was due to scarcity of work; in 46,912 cases, or 29 per cent., to illness or accident; in 4,818 cases, or 3 per cent., to industrial disputes; in 2,276 cases, or 1.5 per cent., to old age; and, in 27,612 cases, or 17 per cent., to other causes.

(ii) *Duration.* At the Census of 1921 persons who were unemployed on Saturday, 2nd April, 1921, were asked to state the number of working days during which they had been out of work. The results of the inquiry show that approximately 46 per cent. were unemployed under five weeks, 17.2 per cent. from five to ten weeks, 10.6 per cent. from ten to fifteen weeks, and 26.2 per cent. above fifteen weeks.

§ 10. Dwellings.

Information regarding the number, ownership, rental value, number of rooms, and inmates of dwellings recorded in Australia at the Census of 1921 will be found in Year Book No. 22, p. 926. It is not proposed to repeat this here. More detailed information is given in the Census of 1921—Parts Nos. XVIII.—XXV.

§ 11. Immigration.

(A) The Encouragement of Immigration into Australia.

1. Joint Commonwealth and States' Immigration Scheme.—An outline of the arrangements made between the Commonwealth and State Governments to regulate immigration into Australia will be found in Official Year Book No. 22, p. 929.

Owing to financial and industrial depression the Commonwealth Government, early in 1930, decided to reduce the flow of assisted migrants by limiting the assisted passage concession to boys for farm work, young women for household employment, and to nominees, mainly wives and children of husbands in Australia.

2. Assisted Passages.—The British and Commonwealth Governments jointly donate the following contributions towards the passages of approved settlers for Australia from the United Kingdom:—Children under 12 years, £16 10s. (representing the whole of the half fare); juveniles 12 and under 17 years, £27 10s.; juveniles 17 years and under 19 years, £22; married couples, including widowers or widows, and wives nominated by husbands, with at least, one child under 19 years, £22 per parent (children at rate according to age); domestic servants, £33; others including children 19 years of age and over, £16 10s. Allowing for this financial assistance, children under 12 years will be carried free; juveniles 12 years of age and under 17 years, who are ordinarily charged for by the shipping companies as adult passengers, will merely require to pay £5 10s. each; juveniles 17 years and under 19 years, £11 each; married couples, including widowers or widows, and wives nominated by husbands, with at least one child under 19 years, £11 per parent (children at rate according to age); domestic servants free; others, including children 19 years and over, £16 10s. each. Persons who have previously resided in the Commonwealth are not eligible for assistance. In addition to these contributions, loans of the balance of the passage money are in special cases granted by the Governments concerned. Persons entitled to assisted passages are divided into two classes—"Selected" and "Nominated." "Selected" immigrants are those such as boy farm learners and domestics who are originally recruited abroad by the Commonwealth Government. "Nominated" immigrants are those nominated by persons resident in Australia, and the nominators, who must submit their applications through the officers in charge of the State Immigration Offices in the various capital cities, are held responsible for their nominees upon arrival, so that they shall not become a burden upon the State.

Intending settlers or immigrants may, on application, obtain full information from the Official Secretary, High Commissioner's Office, Australia House, Strand, London, W.C.2; or from the Secretary, Department of Transport, Commonwealth Offices, Treasury-place, Melbourne.

3. Migration Agreement between British and Commonwealth Governments.—

On the 8th April, 1925, the British and Commonwealth Governments entered into an agreement under which it is proposed to furnish to the Governments of the various States, loan moneys at a very low rate of interest, to enable suitable areas of land to be made available for settlement, or to enable such public works to be carried out as will tend to develop and expand settlement areas or will enable areas already settled to carry a greater population. The maximum amount of loan moneys provided for in the agreement is £34,000,000. It is provided that for every principal sum of £75 issued to a State Government under the agreement, one assisted migrant shall sail direct from the United Kingdom and be received into and satisfactorily settled in the State concerned. If full advantage is taken of the offer of loan moneys contained in the agreement, 450,000 new settlers will be absorbed during a period of ten years.

4. Results of Assisted Immigration.—The number of assisted immigrants for the years 1927 to 1929 and the total from the earliest years up to the end of 1929 are given in the following table:—

ASSISTED IMMIGRATION.—1927 TO 1929, AND UP TO THE END OF 1929.

Persons.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F.C. Terr.	Total.
No. Assisted during 1927	10,260	8,847	3,604	2,420	4,879	189	24	30,123
" " " 1928	8,732	5,149	2,178	1,623	4,485	203	24	22,394
" " " 1929	5,431	2,604	1,292	526	2,976	101	13	12,943
Total from earliest years to end of 1929 ..	344,536	254,789	235,442	115,750	85,514	24,927	61	1,061,019

Particulars of occupations of the number of selected and nominated immigrants during 1929 are shown below:—

ASSISTED IMMIGRATION.—SEXES AND INDUSTRIAL GROUPS, AUSTRALIA, 1929.

Industrial Group.	Selected.			Nominated.		
	Males.	Females.	Total.	Males.	Females.	Total.
I. Wood, Furniture, etc. ..	..	..	..	52	..	52
II. Engineering, Metal Works, etc. ..	3	..	3	305	1	306
III. Food, Drink, Tobacco, etc. ..	1	..	1	82	16	98
IV. Clothing, Hats, Boots, etc. ..	..	..	..	88	177	265
V. Books, Printing, etc. ..	..	..	..	20	7	27
VI. Other Manufacturing ..	..	..	..	39	13	52
VII. Building ..	7	..	7	151	..	151
VIII. Mining ..	5	..	5	212	..	212
IX. Rail and Tramway Services ..	..	..	..	26	..	26
X. Other Land Transport ..	3	..	3	75	..	75
XI. Shipping, Wharf Labour, etc. ..	..	..	..	22	..	22
XII. Pastoral, Agricultural, etc. ..	2,527	22	2,549	608	2	610
XIII. Domestic, Hotels, etc. ..	..	1,177	1,177	13	1,012	1,025
XIV. General Labour and Miscellaneous ..	7	..	7	821	403	1,224
Dependents ..	3	7	10	1,694	3,342	5,036
Total ..	2,556	1,206	3,762	4,208	4,973	9,181

(B) The Regulation of Immigration into Australia.

1. Powers and Legislation of the Commonwealth.—(i) *Constitutional.* Under Part V., Sec. 51, xxvii. and xxviii. of the Commonwealth Constitution Act, the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals.

(ii) *Legislation.* A summary of the provisions of the Immigration Act 1901–1925 and the Contract Immigrants Act 1905 (excepting the provisions of the Amending Immigration Acts of 1920, 1924 and 1925, which will be found in Official Year Book, No. 21, p. 927), containing particulars regarding the admission of immigrants, prohibited immigrants, the liabilities of shipmasters and others, and kindred matters will be found in preceding Year Books (see Year Book, No. 12, pp. 1166 to 1168).

2. Conditions of Immigration into Australia.—(i) *Immigration of Non-European or Coloured Persons.* In pursuance of the “White Australia” policy, the general practice is not to permit Asiatics or other coloured immigrants to enter Australia for the purpose of settling permanently. Exclusion is effected, where necessary, by the application of a dictation test which may be imposed in any European language at the discretion of the officer who applies it. In other words, the test when applied is used as an absolute bar to admission; but, as a matter of fact, occasion does not arise for the test to be applied to any great extent, as shipping companies refrain from bringing coloured passengers to Australia unless they have authority to land, on the ground of former domicile or temporarily for business purposes, etc.

There are special arrangements with India, Japan, and China under which facilities are afforded for subjects of those countries who are bona fide merchants, students, or tourists to enter and remain in Australia under exemption whilst they retain their status as merchant, etc.

(ii) *Immigration of White Aliens.* In addition to the usual general requirements as to sound health, good character and possession of valid passports, which apply to British as well as foreign subjects, it is necessary that each alien immigrant (i.e., 18 years of age or over) shall be in possession of at least £40 landing money, unless he holds a landing permit issued by the Department of Home Affairs as a result of application having been made on his behalf by a relative or friend in Australia who has guaranteed maintenance.

Aliens are required to have their passports *visa*d by a British Consul for travel to Australia except in cases where *visa* requirements have been abolished by reciprocal arrangements to which the Commonwealth Government of Australia is a party. The exemptions so far apply to nationals of the following countries, viz. :—Belgium, Denmark, France, Italy, Liechtenstein, Norway, Sweden, Switzerland, Holland and Germany.

(iii) *Quota Restrictions on certain Classes of Europeans.* In view of the conditions existing in Australia it was found necessary to place restrictions on the migration to Australia of certain classes of European aliens, and to confine the authority for admission in such cases mainly to (a) persons holding landing permits issued by the Department of Home Affairs; (b) persons previously resident in Australia; and (c) very close relatives, such as wives, minor children, and parents of persons already domiciled in Australia. The control of such migration is effected through the British *visa* system, and further information may be obtained in foreign countries from the British Consular or Passport Control Officers.

(iv) *General Information.* General information as to conditions of entry into Australia may be obtained from the following offices :—

- (a) In Australia : The Secretary, Department of Home Affairs, Canberra, F.C.T., Australia; (b) In Great Britain : The Official Secretary, Australia House, Strand, London, England; (c) In the United States of America : The Official Secretary, Commissioner for Australia in the United States of America, “Cunard Building,” 25 Broadway, New York City, U.S.A.

3. **Persons Admitted Without Dictation Test.**—The following table shows the number and nationality of persons admitted during the year 1929 without passing the dictation test :—

**PERSONS ADMITTED WITHOUT DICTATION TEST.—NATIONALITIES,
AUSTRALIA, 1929.**

Nationality or Race.	1929.	Nationality or Race.	1929.
Albanian	267	American Negroes	22
Austrian	87	West Indians	8
Belgian	102		
British	68,890	ASIATICS—	
Bulgarian	247	Arabs	17
Danish	161	Chinese	1,487
Dutch	140	Filipinos	16
Estonian	88	Japanese	365
Finnish	144	Javanese	5
French	619	Malays	63
German	559	Natives of India and Ceylon	172
Greek	408	Palestinians	120
Italian	2,044	Syrians	57
Jugo-Slavian	390	Timorese	134
Maltese (British)	170		
Norwegian and Swedish	154	OTHER RACES—	
Polish	305	Pacific Islanders	32
Russian	206	Papuans	460
Spanish	59	Unspecified	34
Swiss	163		
United States of America	1,884		
Other Whites	247	Total	80,326

4. **Departures of Persons of Non-European Races.**—The number of persons of non-European races who left Australia during the year 1929 was 3,154, distributed among the various nationalities as follows :—American Negroes, 18 ; West Indians, 4 ; Arabs, 13 ; Chinese, 1,981 ; Filipinos, 27 ; Japanese, 273 ; Javanese, 6 ; Malays, 70 ; natives of India and Ceylon, 202 ; Pacific Islanders, 28 ; Papuans, 371 ; Timorese, 118 ; and 43 others.

(C) Passports.

Provision is made in the Immigration Act 1920 for the production of passports by all persons over 16 years of age who desire to enter Australia. Similarly, the Passports Act 1920 provides that no person over the age of 16 years shall leave Australia unless—

- (a) he is the holder of a passport or other document authorizing his departure ; and
- (b) his passport has been *visaed* or indorsed in the prescribed manner for that journey, and the *visa* or indorsement has not been cancelled.

Among the exceptions to this requirement are natural-born British subjects leaving for New Zealand, Papua, or Norfolk Island ; members of the crew of any vessel who sign on in Australia for an oversea voyage and who satisfy an authorized officer that they are by occupation seafaring men ; aboriginal natives of Asia, or of any island in the East Indies, or in the Indian or Pacific Oceans. The charge for a Commonwealth passport is 10s., for an ordinary *visa* 8s., and for a transit *visa* 2s.

With regard to (b), the Commonwealth Government has agreed to the inclusion of Australia in reciprocal arrangements for the abolition of *visa* requirements made by the British Government with the respective Governments of the following countries, viz. :—France, Switzerland, Liechtenstein, Italy, Belgium, Denmark, Sweden, Norway, Holland, and Germany.

§ 12. Naturalization.

1. **Commonwealth Legislation.**—Naturalization in Australia is governed by the Nationality Act 1920–1930. The qualifications necessary for naturalization are :—
(a) Residence in Australia continuously for not less than one year immediately preceding application for naturalization, and previous residence, either in Australia or in some other part of His Majesty's dominions, for a period of four years within the last eight years before the application ; (b) good character and an adequate knowledge of the English language ; and (c) intention to settle in the British Empire.

The amending Act of 1930 provided for the charge of a prescribed fee for a Certificate of Naturalization. The fee is £3, except in the case of a certificate granted to a woman who was a British subject prior to her marriage to an alien, in which case the amount is 5s.

A summary of the main provisions of the principal Act will be found in Official Year Book No. 22, pp. 934–935.

2. **Certificates Granted.**—(i) *Australia.* Particulars regarding the previous nationalities of the recipients of certificates of naturalization issued under the Act during the year 1929, and the countries from which such recipients had come, are given in the following table :—

NATURALIZATION.—COMMONWEALTH CERTIFICATES GRANTED, 1929.

Previous Nationalities of Recipients.	No. of Certificates Granted.	Previous Nationalities of Recipients.	No. of Certificates Granted.	Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.	Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.
	1929.		1929.		1929.		1929.
Italian ..	690	Rumanian ..	2	Great Britain ..	75	South Africa ..	9
Swedish ..	59	Portuguese ..	..	Italy ..	685	Belgium ..	1
Danish ..	43	American (South) ..	..	Germany ..	77	New Zealand ..	12
Russian ..	102	Austrian ..	7	America (North) ..	44	Switzerland ..	20
German ..	88	Serbian ..	..	Sweden ..	39	Spain ..	14
Norwegian ..	41	Syrian ..	33	Denmark ..	31	New Caledonia ..	9
Greek ..	307	Polish ..	27	Norway ..	28	Argentina ..	1
American (North) ..	26	Finnish ..	25	Greece ..	247	Canada ..	3
Dutch ..	17	Jugo Slavs ..	122	France ..	20	Finland ..	17
Swiss ..	22	Others ..	51	Egypt ..	53	Jugo Slavia ..	114
French ..	24			America (South) ..	8	Other Countries ..	154
Spanish ..	14			Holland ..	12		
Belgian ..	6	Total ..	1,706	Russia ..	33	Total ..	1,706

(ii) *States.* The certificates of naturalization granted in 1929 were issued in the various States as follows :—New South Wales, 458 ; Victoria, 278 ; Queensland, 525 ; South Australia, 92 ; Western Australia, 337 ; Tasmania, 6 ; Northern Territory, 8 ; and 2 in the Federal Capital Territory.

§ 13. Population of Territories.

At the Census of the 4th April, 1921, special arrangements were made to obtain complete and uniform information concerning each of the five Territories of the Commonwealth, viz. :—(1) Northern Territory ; (2) Federal Capital Territory ; (3) Norfolk Island ; (4) Papua ; and (5) Territory of New Guinea. Later estimates will be found in Chapter XV.

A summary of the population and number of dwellings in each Territory at the Census of 1921 is given in the following table :—

POPULATION AND DWELLINGS.—TERRITORIES, 4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINES IN THE NORTHERN AND FEDERAL CAPITAL TERRITORIES AND OF THE INDIGENOUS POPULATION OF PAPUA AND NEW GUINEA.)

Territory.	Population.			Dwellings.			Total.
	Males.	Females.	Persons.	Occu- pied.	Unoccu- pied.	Being Built.	
Northern Territory ..	2,821	1,046	3,867	1,074	138	1	1,213
Federal Capital Territory ..	1,567	1,005	2,572	526	29	..	555
Norfolk Island ..	339	378	717	168	22	3	193
Papua ..	1,408	670	2,078	672	43	4	719
Territory of New Guinea ..	2,502	671	3,173	1,056	18	..	1,074

§ 14. The Aboriginal Population.

In Official Year Book No. 17, pp. 951 to 961, a brief account was given of the Australian aboriginal population, its origin, its numbers as estimated from time to time, and the steps taken for its protection. Page 680 of this issue contains a statement showing the numbers of full-blood and half-caste aborigines in Australia, and pages 914 to 916 in Official Year Book No. 22 give particulars for each of the States and Territories of Australia at successive periods, while the special article hereinafter deals with the estimated number and distribution of the native population at the date of first settlement of the white race in the Continent.

§ 15. The Chinese in Australia.

In Official Year Book No. 18, pp. 951 to 956, a brief historical sketch was given regarding "The Chinese in Australia," but limitations of space preclude its repetition in the present volume.

§ 16. The Pacific Islanders in Australia.

In Official Year Book No. 19, pp. 902-3, a brief account was given of the introduction of Kanakas into Australia.

FORMER NUMBERS AND DISTRIBUTION OF THE AUSTRALIAN ABORIGINES.*

1. *General.*—Since the white man first began to occupy the Australian continent, the aborigines have very rapidly decreased in numbers. It is, therefore, of some interest to endeavour to form as accurate an estimate as possible of the size of the original population. That is a task, however, that is beset with very great difficulties, for the data are scanty and for the most part unreliable. There have been published since 1788 many estimates of the native population of various parts of the continent. Very frequently, however, the area of country to which the estimate is supposed to apply is not clearly defined, and, generally, the basis on which the estimate is made is not explained.

2. *Variation in Density.*—It is quite evident that the density of the aboriginal population was different in different parts of the continent, and it seems to have varied fairly closely with the food supply. There is a large area of arid country including part of Western Australia, a large part of South Australia, Central Australia, and small portions of New South Wales and Queensland, which cannot maintain more than a very sparse population. Its area can be roughly estimated at 1,000,000 square

* By A. R. Radcliffe Brown, M.A., Professor of Anthropology, University of Sydney.

miles, or about one-third of the whole continent. On the other hand, there are certain well-watered areas which are better than the rest of Australia in the food supply that they afford for such a hunting, fishing and collecting people as the Australian aborigines. The Murray River for a large part of its course provided one such specially favourable environment. The coastal districts of New South Wales and Queensland seem to have provided another.

3. *Method of Estimation.*—(i) *Division into Districts.* Any systematic attempt to estimate the former native population of Australia must therefore proceed by dividing the continent into districts and considering each district separately. Further, the territorial areas to be considered must be those recognized by the natives themselves.

(ii) *Aboriginal Territorial Areas.* (a) *Tribes.* It would seem that all over the continent the aborigines had the same general territorial organization. We can distinguish three kinds of territorial groups, which will be denoted as "tribe," "sub-tribe," and "horde." A tribe consists of a number of persons who speak one language or dialects of one language and who practise the same customs. The name of the language may be used as the name of the tribe. (b) *Sub-tribes.* In some parts of the continent the tribe is subdivided into sub-tribes, which usually, if not always, have differences of dialect within the common language. (c) *Hordes.* Everywhere the tribe is divided into hordes. The horde is the land-owning group. Each horde consists of a small body of persons who own and occupy in common a territory of which the boundaries are known. Women enter the horde by marriage from other hordes, but sons belong to the horde of the father for life.

(iii) *Factors to be Determined.* Any accurate estimate of the numbers of aborigines in any district requires a knowledge of the extent (i.e., area occupied) and the volume (i.e., number of persons) of the horde and the number of hordes in the tribe.

4. *Western Australia.*—(i) *Area north of Gascoyne River.* We may now proceed to consider in order a number of areas beginning at the Ninety Mile Beach, in Western Australia. The first area consists of the country lying north of the Gascoyne River and including the Ashburton, Fortescue, and De Grey Rivers. The total area is about 120,000 square miles or perhaps somewhat more. The area thus defined contains, or formerly contained, not less than 24 tribes, each with its own language. These are the Nangamada at the south end of the Ninety Mile Beach, the Ngerla and Widagari on the De Grey River, the Nyamal on the Coongan, a tributary of the De Grey, the Kariara and Ngalmu on the coast between the De Grey and the Fortescue, the Mardudhunera, Indjibandi, Pandjima, and Bailgu on the Fortescue River, the Noala, Talaindji, Burduna, Binigura, Tjuroro, Djiwali, Tenma, Ina-wonga, and Ngala-wonga on both sides of the Ashburton, and the Baiong, Maia, Targari, and Warienga north of the Gascoyne. There is another tribe on the Upper Gascoyne, and on the upper waters of the De Grey, Oakover, and Fortescue Rivers there are the Ibarga, Targudi, Ngadari and Wirdinya, the exact location of which is not known but whose territory falls wholly or in part within the area we are considering. Thus the average extent of a tribe in this district is under 5,000 square miles. Some of the smaller tribes have considerably less than this.

The native population throughout this area is now very greatly diminished, so that the present number does not give us any indication of the former number.

All these tribes are divided into hordes. There has been no complete survey of even one tribe, but collected data show that the average area of territory occupied by a horde was probably not more than 150 square miles.

It is not easy to obtain accurate information as to the average number of persons in a horde in former times. Some hordes were larger than others. My own inquiries have led me to conclude that the normal or average horde in former times cannot have numbered less than 30 persons, men, women and children.

This would give a density of one person to 5 square miles, or a total population for the whole area of 24,000. The number of persons in a tribe, i.e., speaking one language, would vary from 500 for the smallest tribes up to something over 1,000.

The region is by no means a favourable one. A large part of it is now occupied with sheep stations, but has only one sheep to every 45 acres. It is reckoned that a highly improved station can run one sheep to 10 acres, but this is possible only in the best areas and is quite exceptional. The region was not, therefore, as compared with the rest of Australia, one of dense population.

Data that would afford a means of testing this estimate are unfortunately almost non-existent. Charles Harper in Curr ("The Australian Race," I., 287) gives an account of the Ngerla tribe (there spelled Ngurla). The tribe is said to occupy an area of 40 miles by 20 and to have consisted in 1864 of several hundred souls. The tribe certainly occupied a much larger area than this, and Harper's remarks therefore apparently apply to only part of it. A. K. Richardson (Curr, I., 296) estimates the population in 1865 of the Ngaluma tribe as consisting of from 250 to 300 persons. A considerable decrease took place in 1866 as the result of small-pox. The Ngaluma is a small tribe with not more than 2,500 square miles of country. One of Curr's informants (Curr, I., 302) writes of what he calls the Kakarakala tribe as extending from North-west Cape to 30 miles south of the Gascoyne River, and from 30 to 50 miles inland, and estimates the number in this area in 1877 at about 2,000. The area defined actually included four tribes: the Talaindji, Baiiong, Maia and Ingarda, and my own estimate would require a population of 2,500 to 3,000 for the four. It may be noted that the estimate was made by Curr's informant about two years after the natives had suffered a very heavy mortality from small-pox.

(ii) *South-Western Area.* We may next consider the south-western portion of Western Australia now occupied as agricultural country. There is here about 50,000 square miles of comparatively well-watered country which provided a fairly favourable environment for the aborigines. We have no information about the territorial divisions of the aborigines (tribes and hordes) that is of any value.

In the early days of settlement, the population of the region of the Swan River settlement was estimated by Sir James Stirling at one native to 2 square miles. Seven hundred and fifty were known to have visited Perth from the district surrounding it, about 40 miles each way. This is probably an over-estimate, but is about the only figure we have.

I believe, however, that we shall be safe in allowing one person to 4 square miles for this region, giving a figure of 12,500.

(iii) *Murchison District and Eastern Goldfields Area.* In addition to the two areas considered, there is an area of about 100,000 square miles, including the Murchison District and the Eastern goldfields, that had a population that I propose to put down provisionally, at 5,000, or one person to 20 square miles.

(iv) *Total for Western District.* Thus for the western part of Western Australia, an area of 270,000 square miles, I propose to assume that there was a native population of 41,500. Excluding about 100,000 square miles of the Kimberley District in the north, which will be treated separately, we are left with an area of 605,920 square mile of arid country almost entirely unoccupied by white settlement and partly unexplored. The whole of this vast region has or had an aboriginal population, but undoubtedly a very sparse one. There are no data whatever on which to base any estimate of their numbers.

(v) *The Kimberley District.* Dr. A. P. Elkin has kindly given me an estimate of the former population of the Kimberley District, based on his recent ethnological investigations in that area. He puts the original population at about 9,700, divided into 26 or more tribes, varying from small tribes of 100 to large ones of 1,000.

(vi) *Total for State.* I estimate, therefore, that Western Australia contained originally not less than 52,000 aborigines, and more probably 55,000, over an area of 975,920 square miles, much of which is desert.

5. *South Australia.*—(i) *General.* Passing to South Australia, a great deal of that State is arid and was very sparsely peopled, and the south-eastern part alone provided a favourable environment. Of the total area of 380,070 square miles, only a little over 60,000 square miles have a rainfall of over 10 inches.

(ii) *Estimates by Moorhouse and Eyre.* Moorhouse in 1843 estimated that there were 1,600 aborigines in regular and irregular contact with the Europeans distributed in the Adelaide district, Encounter Bay, Moorundie, Port Lincoln and Hutt River. If the districts within 120 miles south, 160 miles north and 200 miles east of Adelaide were included, he estimated that the total would be about 3,000. Eyre thought this an under-estimate, and that if the Port Lincoln Peninsula were included the number

would be 6,000. Both Moorhouse and Eyre had better opportunities than any one else to form an estimate of the aboriginal population. Nevertheless, I think it can be shown that even Eyre's estimate is too small if we include that part of South Australia through which the Murray River flows.

(iii) *Murray River Area.* The Murray River, from a point westward of the Darling Junction to the mouth, was occupied by two groups of tribes. One group had the word *meru* for "man" or "blackfellow," and included the Ngintaitj, Yuyu, Yirau, Nyauaitj, Ngaiyan, Nganguruku and Ngaraltu. The other group used the term *ngarindjeri* for "man" or "blackfellow," and hence are frequently referred to by the name Narrinyeri. This group included four or five tribes—the Portaulun, at the entrance of the Murray to Lake Alexandrina; the Yaralde, on the south of Lake Alexandrina and on Lake Albert; the Tanganalun, on the Coorong; and either one or two tribes on the north side of Lake Alexandrina and at Encounter Bay.

A small portion of the area occupied by the Meru tribes belongs to Victoria and New South Wales, but the greater part of it belongs to South Australia. These tribes had suffered a very heavy mortality from small-pox before the white man first came in contact with them.

It would take a good deal of space to discuss critically the evidence relating to these tribes. There is good evidence that the population was, for Australia, a dense one. In 1877 there were still living about 400 of the Yaralde tribe, the names being contained in a list written down by Taplin at that time. The tribe cannot have numbered originally less than 600 and was probably more than 800 before 1820. The tribe was divided into 22 or more large hordes which probably contained not less than 40 persons on the average. Taplin states that "all the Narrinyeri on the southern sides of Lakes Alexandrina and Albert," i.e., the two tribes of Yaralde and Tanganalun, "could muster easily 800 warriors." To provide 800 fighting men a population of 2,400 must be supposed for these two tribes together. This is perhaps an over-estimate. Taplin relates that in 1849 he saw a battle where 500 of the Narrinyeri met some 800 of the Murray natives.

(iv) *Total for South Australia.* Allowing something for the tribes east of the Murray to the Victorian border, we are, I think, keeping quite on the safe side in estimating an original population of 6,000 for the south-eastern portion of South Australia east of the Mount Lofty Ranges. Estimates for the rest of the State are difficult to arrive at with any certainty, but I believe we can quite safely assume one person to 80 square miles. A total population of 10,000 for South Australia as a whole is, therefore, probably well under the true figure.

6. *Victoria.*—(i) *Early Estimates.* For Victoria a number of estimates of population were made in the early days of occupation. E. S. Parker, who was for many years a Protector of Aborigines, and had probably better opportunities than any other person for forming a reliable judgment, estimated that at the foundation of the colony the aboriginal population was 7,500. It is evident also that he tried to make a real estimate and not a mere guess. He said in a lecture given in 1854: "In the year 1843, I endeavoured to take a nominal census of the aboriginal population in the district extending from the Goulburn on the east to the Upper Wimmera on the west, and from the Great Dividing Range between the coast river and the interior waters on the south and the Mallee country on the north. I found and registered by name, in their respective families and tribes, about 1,100 individuals."

A later Protector of Aborigines, William Thomas, after a careful estimate, concluded that the aboriginal population of Victoria before the white occupation could not have been less than 6,000.

These two estimates, by Parker and Thomas, are the most reliable we have for the whole colony.

About 1845, Robinson, Chief Protector of Aborigines at Port Phillip, estimated the population of that district to be at least 5,000.

Brough Smyth in 1878 gives a much smaller number, estimating that the total aboriginal population of Victoria did not number more than 3,000. But the estimate is based on arguments that are open to grave suspicion, and should, I think, be rejected.

We are thus left with three estimates—not less than 5,000 (Robinson), not less than 6,000 (Thomas) and 7,500 (Parker). To them we may add McCombie's statement that Victoria when first colonized contained 7,000 aborigines.

(ii) *Early Estimates for Districts.* We have also a few early estimates of the population of certain parts of the colony. Thomas states that in 1835-6 the aboriginal population of the counties of Bourke, Evelyn and Mornington was 350. He adds that one-half at least of one of the tribes inhabiting these counties had perished in 1834 in a war with Gippsland and Omeo blacks, and that previous to the war the total number was certainly not less than 500. As the three counties mentioned had an area of about 3,000,000 acres, this would give one person to 6,000 acres.

Westgarth in 1848 writes: "The entire area of Australia Felix does not probably contain at present more than five thousand aborigines, or about one aboriginal inhabitant to each nineteen square miles. Of this scanty population about one thousand are in Gipps' Land, two thousand in the Western Port, Murray and Wimmera districts, and two thousand throughout the remainder of the territory."

By 1848 the aboriginal population had been considerably reduced as the result of small-pox, and of the white settlement.

About 1845 an attempt was made by the Aborigines Committee of the Legislative Council of New South Wales to discover the number of the aborigines. Victoria then consisted of five districts. Gipps' Land was estimated by Tyers to contain 1,000 aborigines, the Murray district was estimated by Smyth to contain 200. Fyans estimated the population of the Portland Bay district 3,000, and Wilson gave 300 for Normanby county, which was part of that district. No numbers were obtained for the Wimmera district. For the Western Port district Powlett gave an estimate of 1,000, but within this district Addis gave 200 for Grant county. Thomas gave 165 for Yarra and Western Port, and Parker gave 302 for the Upper Goulburn and Campaspe Rivers, 200 for the Lower Goulburn, 350 and 670 for the country north and west of the River Loddon. These separate estimates would give considerably more than 1,000 for the whole Western Port district.

We may consider these five subdivisions of Victoria separately. If we accept Howitt's account, Gippsland formerly contained six tribes—Brataualung, Brayakaulung, Brabralung, Tatungalung, Krauatungalung and Bidweli. There were local subdivisions of the tribes, and of these Howitt enumerates twenty for the first five tribes mentioned above. If the total population of the five tribes was 1,000, this would give an average of only 200 per tribe and an average of 50 persons for each local subdivision of the tribe.

The Rev. John Bulmer in 1878 thought that the aborigines in Gippsland could never have numbered more than 1,000 or at most 1,500. Curr (III., 543) estimated the original population at 1,500. This is probably nearer to the truth than 1,000.

If we accept the low estimate of 1,000 for Gippsland this would give a density of only one person to 15 square miles. As the region is of heavy forest, it may well have been only sparsely populated except on the coast. But the figure of 1,000 seems likely to be an under-estimate. We may accept it as the irreducible minimum.

The Murray district was bounded on the north by the Murray, on the south-east by the Australian Alps and on the west by the Goulburn River. The estimate of 200 for the district by Smyth is certainly wrong. A. C. Wills, former Police Magistrate and Warden at Omeo, stated that in May, 1835, there were about 500 or 600 men, women and children resident during a few months of each year at the headquarters of the "Gundanora" tribe on the elevated plain of Omeo. In 1842 they frequently assembled in larger numbers. In 1862 H. B. Lane stated that "the 40 blacks to whom rations, &c., are distributed at Tangamballanga are the sole remnant of three or four once powerful tribes each of which, even within the memory of old settlers, numbered from 200 to 300 souls. These tribes inhabited the tract of country now very nearly described on the electoral map as comprising the Murray district of the Eastern Province, and comprising an area of about 2,000 square miles." He goes on to state that the country was one well suited for the blacks.

For the tribes of some parts of the Murray district we have little information, but for those at the junction of the Goulburn and Murray Rivers we have the probably reliable observations of Edward Curr, who was a pioneer settler there in 1841. His account would show 1,200 aborigines in an area of 3,000 to 3,500 square miles, or one

person to 2.5 or 3 square miles. Of these 1,200, 550 occupied a small area of about 1,200 square miles between the Goulburn and the Murray, and belong to the Murray district, the remainder belonging to New South Wales or to the Western Port district of Victoria.

Scanty as these data are, they point very distinctly to the whole aboriginal population of the Murray district, i.e., the region between the Goulburn and Murray Rivers, as having been probably over 2,000. To be on the safe side and keep always to a minimum we may put 1,500.

Turning now to what used to be called the Western Port district, this was occupied by a few large tribes, called by Parker "petty nations." These were the Bunwuring, Woewuring, Tagunwuring, Djadjawuring and Wudjawuring. Each of these tribes was subdivided into local divisions, which we may regard as sub-tribes. Howitt enumerates five such for the Woewuring tribe. Parker gives seven for the Djadjawuring. The sub-tribe was further subdivided into groups which Howitt calls "clans," there being three or four such in the Wurunjeri sub-tribe of the Woewuring. According to Howitt the clans were again subdivided into lesser groups of people, and each had its own definite tract of country and food grounds.

A. C. Le Souef, a good observer with exceptional opportunity, describes what are apparently four sub-tribes of the Tagunwuring tribe. He gives their names as Bootheraboolok, Natrakboolok, Nerboolok and Ngooraialum, and estimates the original numbers of the first two at 100 each and of the last two at 200 each. On Curr's map (III., 566) these groups occupy an area of about 4,500 square miles. Le Souef's estimate therefore gives one person to 7.5 square miles.

Parker describes the Djadjawuring as subdivided into seven parts, which he calls "tribes," and as having "at a remote period numbered about one thousand beings." With a total of 1,000 the average number of a sub-tribe would have been less than 150.

Seeing that each sub-tribe spoke a separate dialect and was divided into hordes, it will seem that we cannot possibly estimate the sub-tribe at less than 100 persons, and for the five tribes mentioned we cannot allow less than 3,000 persons. This figure receives some confirmation from the fact that in 1843 Parker was able to enumerate by name 1,100 individuals between the Goulburn and the Upper Wimmera.

For the Portland Bay district we have Fyans' estimate for 1845 at 3,000, and Wilson's estimate of the same date of 300 for Normanby county. Dawson says that 21 "tribes" used to hold their great meetings at a marsh some miles west of Caramut. His estimate is that each "tribe" mustered 30 fighting men or 120 persons on the average, thus giving a total of 2,500 for the tribes referred to. The coast tribes are not included, as they did not attend these meetings. Dawson adds: "In the estimation of some of the earliest settlers, this calculation of the average strength of each tribe is too low." What Dawson calls "tribes" appear to be sub-tribes. The names of the tribes proper are not known. Tjapwuring seems to be one of them. Dawson writes that at the annual meetings "where sometimes twenty tribes assembled there were usually four languages spoken, so distinct from one another that the young people speaking one of them could not understand a word of the other three." It would seem therefore that there were at least four distinct tribes divided into twenty sub-tribes.

Brough Smyth, on the information of H. B. Lane and Charles Gray, gives an account of the "tribes" of part of the Portland district. These are really sub-tribes, and it would appear that 25 of them occupied an area of about 6,750 square miles, or on the average 270 square miles each. If we take Dawson's estimate of 120 to the sub-tribe, we have a density of one person to $2\frac{1}{2}$ square miles. This would seem to be perhaps too high.

Allowing, however, that Dawson's statements refer to only part of the Portland Bay district, and allowing also for Wilson's estimate of 300 in Normanby county in 1845, we must conclude that the figure of 3,000 given for this district in 1845 is not too high, and that the original population was probably considerably more than that figure.

The Wimmera district falls into three parts. The southern part on the Upper Wimmera was probably well populated. The central portion around Lake Hindmarsh and to Lake Tyrrell had a sparser population. The region bordering the Murray River was inhabited by a number of small tribes, there being seven of them between the Loddon and the Darling junction. These river tribes were enormously reduced by

small-pox in the thirties, but even then were numerous, and the evidence is that this was one of the most densely populated regions of the southern part of Australia. Probably this portion of the Murray from Echuca to the Darling junction, and including some part of the Murrumbidgee, originally supported a population of not less than 5,000 or 6,000 aborigines divided into ten or twelve tribes. We may reasonably allot 2,000 of them to Victoria.

An estimate of 1,000 for the southern and central part of the Wimmera district would not be an over-estimate.

(iii) *Total for Victoria.* We then reach the following estimate for Victoria as a whole :—

District.	Number of Aboriginals.
Gippsland	1,000
Murray District	1,500
Western Port District	3,000
Portland Bay District	3,000
Wimmera District	3,000
	<hr/>
	11,500

This estimate would still give a density of only one person to 7.65 square miles.

This figure of 11,500 is considerably in excess of Parker's figure of 7,500, and there is good reason for thinking that Parker's was by far the most carefully made of the early estimates. It would seem (1) that Parker was not making allowance for the tribes on the Murray River, who count for 2,000 in my estimate. (2) Parker made no allowance for the very heavy mortality from small-pox for which we have good evidence in Victoria (except Gippsland) in the decade before the white settlement. (3) It will be noticed that very regularly estimates for a large area give a smaller proportionate population than those for smaller areas. We should allow, I think, a very great weight for estimates made for limited areas by reliable informants such as Curr and Le Souef, who had far better opportunities of getting exact information than Parker had. I have therefore relied on such statements in making my general estimate. (4) The figure does not by any means seem excessive when we consider the great diversity of language and dialect in Victoria. If we allow only 500 persons for a tribe or language and only 100 to 120 for a dialect, the total estimate of 11,500 for the colony is not extreme, and would, indeed, seem to be too small. Taking all these things into consideration, my own impression is that 11,500 for the original population of Victoria before the small-pox is decidedly an under-rather than an over-estimate.

7. *Queensland.*—(i) *General.* As it is difficult to arrive at any estimate of the numbers in New South Wales, I propose to consider Queensland first. In dealing with this area it must be remembered that before the white settlement there had been already a mortality from small-pox which was probably very heavy and that there was, in many districts, in the first two or three years of settlement, an enormous mortality, chiefly, though not entirely, amongst men, as the result of massacres by settlers and police. There is abundant evidence that many thousands of aborigines were shot in order that the white man might enjoy undisturbed their tribal lands.

(ii) *Estimates for Various Areas.* The first area I propose to consider includes a small part of New South Wales. It extends from the Clarence River in the south to Broad Sound in the north, and is bounded by the watershed between the eastward and westward flowing rivers. This area included a number of tribes. From the Clarence River to the Burnett River the chief tribes were the Yukumbil, Yagara, Djandai, Waka, Kabi and Koreng. From Port Curtis to Broad Sound there seem to have been seven smaller tribes—Tarambara, Yetimarala, Kuinmurbara, Ningebal, Warabal, Tarumbal and Urambal. Each of these tribes was subdivided into sub-tribes, and for the greater part of the area the sub-tribes have names which are formed by means of the suffix *-bara*. A probably incomplete list from W. H. Flowers enumerates seven such sub-tribes for the Kuinmurbara, five for the Ningebal, four for the Tarumbal, and four for the Warabal. For the Kabi tribe we have two lists, one giving sixteen and the other 23, but even by combining the two it is not possible to make a complete list.

Each tribe had its own language, and each sub-tribe spoke its own dialect of the tribal language. The sub-tribe was further divided into a number of hordes, each of which was a land-owning group. My own inquiries for this region have led me to conclude that each horde occupied, on the average, about 100 square miles or less, and may be taken as having on the average 30 members, men, women and children, or more. This will give us a density of population of three persons to 10 square miles. The part of the region that lies in Queensland may be estimated roughly at 50,000 square miles, and the population would therefore be 15,000. This would mean that in the northern part of the region the small tribes would contain about 450 individuals in an area of about 1,500 square miles, divided into sub-tribes of perhaps 100 persons, each subdivided into a few small hordes. The larger tribes, such as the Kabi, would number 2,500 persons or more divided into sub-tribes of about 100, and these subdivided into small hordes.

That this estimate is very moderate is indicated by early statements. Thus, Howitt's informant (Flowers) states, with reference to the Kabi tribe, that "about the year 1859 these blacks might have been counted by thousands." In an account forwarded to Curr by the Chief Commissioner of Police, Brisbane, in 1879, with reference to Great Sandy or Fraser's Island, which is a small part of the Kabi territory, it is stated that in 1849 the population of that island, which was split into nineteen "tribes," amounted to about 2,000 souls, of whom 300 or 400 still survived in 1879. J. D. Lang, in 1861, wrote: "Frazer's Island is rather of indifferent character, in point of soil and general capabilities, in the estimation of Europeans; but it is an excellent fishing station, and abounds in the requisites of aboriginal life. It is consequently very populous—the number of aborigines in the island being estimated at not fewer than 2,000." This figure of 2,000 for the island seems excessive. It may well be that such a number might be found in the island at certain seasons when there were visitors from the mainland. We know that very large numbers of natives used to collect together in the Bunya Mountains from a wide radius to feast on the bunya nuts when they were in season. Still, Lang's statement indicates that the estimate I have made for the whole region is probably well below the true number.

The basin of the Burdekin River and its tributaries, and the coastal districts from Mackay to Cairns give an area of something over 65,000 square miles of well-watered country. According to G. F. Bridgeman, there were four "tribes" within a radius of 50 miles or so of Port Mackay. The country was occupied about 1860, and during the eight or ten years which followed, about one-half of the aboriginal population was either shot down by the police or perished from disease. Numbers were carried off in 1876 by measles. In 1880 one of the tribes numbered about 100. This would seem to give us a figure for the original population of not less than one to 6 square miles. James Cassady states that the Halifax Bay tribe occupied a tract of country fronting the shores of the bay for about 50 miles and extending 15 miles inland. It was divided into seven sub-tribes. The population in 1865 is estimated to have amounted to about 500 persons. The numbers in 1880 were approximately 200, the decrease being said to be due mostly to massacres by settlers and native police. Even if we allow an area of 1,000 square miles for the tribe, this gives us a density of one person to 2 square miles, each sub-tribe numbering about 70 in an area of under 150 square miles. Lumboltz, who visited the Herbert River in 1882, when the number of natives had already somewhat decreased, and who had good opportunity for making a reliable estimate, describes the natives as divided into what he calls "family tribes," i.e., apparently hordes, each containing about 20 to 25 individuals, often less. His estimate of the extent of a tribe is about 40 miles by 30, and its volume at 200 to 250 persons. This gives a density of only two persons to 10 square miles.

A comparison of the accounts given of the country around the Cape River indicates that the tribes here were divided into a few large sub-tribes, each with more than 400 persons and occupying about 1,600 square miles. This gives a density of not less than four persons to 10 square miles.

Allowing for differences of population in different parts of the area, greater on the sea-coast but less in such a forest or scrub region as the Herbert River, I think we are safe in allowing one person to 4 square miles for the whole area, or 16,250 in all.

The area occupied by the Dawson, Comet and Mackenzie Rivers and other tributaries of the Fitzroy may be estimated at something over 45,000 square miles. A tribe in this region at the head of the Comet River is estimated to have numbered 500 in 1860, was 300 in 1869, and 200 in April, 1879. A reasonable estimate for this region is 10,000.

If we compare the statements of Roth with those of Curr's informants it would seem that the Boulia district contained fifteen or more small tribes numbering from 100 to 300 persons. Roth estimates the area at 10,000 square miles, but that is, I think, a gross under-estimate. The area in question is probably 30,000 square miles, and we can perhaps allow for it a density of one person to 10 square miles.

(iii) *Total for Queensland.* It would take much space to discuss critically each part of Queensland. The conclusion I have reached after examining the available evidence, admittedly not, by any means, satisfactory, is that Queensland could not have contained less than 100,000 aborigines, and probably had more than this.*

8. *New South Wales.*—For New South Wales I will not examine in detail the scanty data available. In 1788, the first year of settlement of Port Jackson, Governor Phillip took the numbers of the aborigines of Port Jackson by causing inspectors to visit every cove or inlet at the same time. One hundred and thirty were counted, who had with them 67 boats or canoes, and many were known to be in the woods making these vessels. The Governor at that time estimated the population between Botany Bay and Broken Bay at 1,500. This population was practically extinct by 1845. A native of the tribe occupying the southern coast of Port Jackson stated that in his recollection, in the time of Governor Macquarie (1810–1821), there were about 400 individuals in the tribe. By 1845 he and three women were all that survived.

The coastal region of New South Wales probably was fairly densely populated, perhaps more in the north than in the south. My estimate is that that part of the State contained about 25,000 aborigines, speaking more than twenty different languages, and that the rest of the State had about 20,000. To be on the safe side we may put the total for the whole State at 40,000.

9. *The Northern Territory.*—Ethnological researches in the Northern Territory now in progress will ultimately, it is hoped, help us to obtain a more accurate knowledge of the original population. Existing data suggest that the whole country probably contained 35,000 persons divided into more than 60 tribes, each with its own language.

10. *Tasmania.*—For Tasmania the available evidence is unsatisfactory. Early estimates of the population are from 6,000 to 8,000 (G. A. Robinson), 5,000 (Captain Kelly), not much, if at all, over 2,000 (Dr. Milligan), and between 700 and 1,000 (Backhouse). There seem to have been four tribes with four distinct languages, divided into sub-tribes with different dialects, and then again divided into hordes which rarely contained more than 30 or 40 individuals. The best estimate that can be made is that the original population was probably not less than 2,000 nor more than 3,000.

11. *Total for Australia.*—It has been impossible to discuss all the data on which these estimates have been based. As remarked in reference to Victoria, it is noticeable that estimates for small areas always give a greater density of population than those for larger areas in the same part of Australia. I believe that in general the estimates for small areas are more reliable than those for larger areas. It has been necessary to consider the reliability of each statement by judging as well as possible what opportunities the person had for making careful observations. Statements by persons who lived for some years in close contact with the natives before depopulation had begun or had proceeded very far have been given the most weight. Allowance has been made for differences in the food supply in different regions. Finally the estimates have been throughout considered in relation to the languages and dialects (tribes and sub-tribes) and land-owning groups (hordes).

* I may quote two out of many scattered statements which go to show that Queensland had a large aboriginal population. Thomas Hall, of Warwick, records how 200 to 300 men would take part in a wallaby drive in the Darling Downs region. A. L. P. Cameron wrote in 1884: "In 1868 I saw gatherings of from 800 to 1,000 in Western Queensland, about 150 miles north of the New South Wales boundary line, and now I am told, on trustworthy authority, that the whole district could not produce a third of that number."

The following estimate, then, I regard as giving the *minimum* that we can reasonably estimate for each portion of Australia.

FORMER ABORIGINAL POPULATION OF AUSTRALIA.

District.	Estimated Number of Aborigines.	Area (square miles).	Density (number of square miles per aboriginal).
Western Australia	52,000	975,920	18·8
South Australia	10,000	380,070	38·0
Victoria	11,500	87,884	7·6
Queensland	100,000	670,500	6·7
New South Wales	40,000	*310,372	7·8
Northern Territory	35,000	523,620	15·0
Tasmania	2,500	26,215	10·5
Total	251,000	2,974,581	11·9

* Inclusive of Federal Capital Territory.

This estimate gives the density of population for the whole continent as being one person to 12 square miles. There is good evidence that in some parts the density was much greater than this, and in considerable areas was at least as high as three persons to 10 square miles, while even in fairly arid regions there was a density of one person to 10 square miles. Omitting, therefore, about one-third of the continent as being desert and having a very sparse population, we ought to be able to reckon that the remaining 2,000,000 square miles would have had a density of population of one person to every 6·5 or 7·5 square miles. At the former figure we should have a population of a little more than 300,000, and with the latter over 260,000.

It is not possible to give an exact count of the number of native languages, still less of the dialects into which they were subdivided. It seems fairly certain, however, that there were more than 500 distinct languages, so that our estimate would allow about 500 persons to a tribe or language on the average. What knowledge we have indicates that we cannot allow a smaller figure than this.

In conclusion, therefore, I would say that the available evidence points to the original population of Australia having been certainly over 250,000, and quite possibly, or even probably, over 300,000.

CHAPTER XXV. VITAL STATISTICS.

§ 1. Births.

1. **Births, 1929.**—The number of male and female births and the total births registered in Australia during the year 1929 are shown in the tables hereunder. The numerical relation which these births bear to the population, and various other associated features, are given in later tables.

BIRTHS, 1929.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Ter.	Fed. Cap. Ter.	Australia.
MALE BIRTHS.									
Single births	26,536	17,050	9,320	5,400	4,446	2,464	31	79	65,326
Twins ..	523	341	164	121	102	34	1	..	1,286
Triplets ..	5	3	..	3	..	..	..	..	11
Total ..	27,064	17,394	9,484	5,524	4,548	2,498	32	79	66,623

FEMALE BIRTHS.									
Single births	25,037	15,853	8,850	5,057	4,384	2,258	20	74	61,533
Twins ..	566	351	152	81	119	38	1	..	1,308
Triplets ..	4	6	..	3	..	3	..	..	16
Total ..	25,607	16,210	9,002	5,141	4,503	2,299	21	74	62,857

TOTAL BIRTHS.									
Single births	51,573	32,903	18,170	10,457	8,830	4,722	51	153	126,859
Twins ..	(a) 1,089	(b) 692	(c) 316	202	(d) 221	72	2	..	(e) 2,594
Triplets ..	9	9	..	6	..	3	..	..	27
Total ..	52,671	33,604	18,486	10,665	9,051	4,797	53	153	129,480

(a) 13 Stillborn twins not included.

(d) 5 Stillborn twins not included.

(b) 4 Stillborn twins not included.

(e) 28 Stillborn twins not included.

(c) 6 Stillborn twins not included.

2. **Birth Rates.**—The next table gives the crude birth rates for the years 1927 to 1929.

CRUDE BIRTH RATE(a), 1927 TO 1929.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Capital Territory.	Australia.
1927 ..	22.69	20.30	22.24	20.12	22.03	23.01	16.06	10.49	21.67
1928 ..	22.60	19.70	21.76	19.76	21.79	22.13	19.73	14.90	21.33
1929 ..	21.39	18.99	19.99	18.40	22.00	22.44	12.69	18.25	20.31

(a) Number of births per 1,000 of the mean annual population.

Generally speaking the crude birth rate of Australia has shown a constant decline for many years, and the rate for 1929 is the lowest yet recorded.

The principal factor in determining the crude birth rate is the proportion of married women of child-bearing age in the community, but as the fecundity of women varies with age, the birth rate per 1,000 married women will vary according to the age composition of the group, and, other things being equal, the rate generally should be

highest where the average age of married women is lowest. For the purposes of the following table the child-bearing age has been taken as from 15-44 years inclusive, and all births of which the mothers were stated to be over 45 years have been counted in the group 40-44.

**BIRTH RATES, AND FACTORS AFFECTING THEM.—AVERAGE OF YEARS
1920, 1921, 1922.**

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia.
Crude birth rate per 1,000 persons. . .	25.99	23.54	26.72	24.23	24.14	26.99	25.15
Birth rate per 100 women 15-44 incl. . .	11.04	9.79	11.83	10.25	11.05	11.91	10.74
Birth rate per 100 married women 15-44 incl. (a)	19.39	19.29	21.26	18.71	19.62	21.83	19.65
Birth rate per 100 married women 15-44 incl. (corrected for age variation) . . .	19.14	19.44	20.77	18.99	20.44	21.24	19.65
Ex-nuptial births—per cent. on all births . .	4.82	4.84	5.00	3.28	4.02	5.11	4.69
Ex-nuptial births per 100 unmarried women 15-44 incl. . .	1.16	0.92	1.26	0.72	0.92	1.26	1.05
Women 15-44 incl.—per cent. all persons . .	23.54	24.02	22.57	23.65	21.83	22.67	23.41
Average age of all women 15-44 incl. . .	28.67	28.61	28.09	28.73	28.45	28.10	28.54
Married women 15-44 incl.—per cent. on all persons . .	12.75	11.61	11.93	12.53	11.81	11.73	12.20
Average age of married women 15-44 incl. . .	32.24	32.74	32.16	32.67	33.02	32.16	32.48

(a) Nuptial births only.

The following figures give a comparison for Australia, at Census periods from 1880, of the total births per 1,000 women (married and unmarried) and of the nuptial births per 1,000 married women of ages 15 to 44 inclusive :—

Particulars.	1880-82.	1890-92.	1900-02.	1910-12.	1920-22.
Births per 1,000 women aged 15-44 . . .	169.7	158.8	117.3	117.2	107.4
Nuptial births per 1,000 married women 15-44 . .	321.0	332.0	235.8	236.0	196.5

3. Birth Rates of Various Countries.—(i) *Crude Rates.* A comparison with other countries shows that the Australian States occupy a midway position, which is, however, counterbalanced by a still lower position in regard to their death rates, as evidenced in the table hereinafter in the section dealing with "Deaths."

CRUDE BIRTH RATES(a).—VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Soviet Republics . .	1927	44.4	Northern Ireland . . .	1928	20.8
Egypt . . .	1928	42.2	Australia . . .	1929	20.3
Ceylon . . .	1928	40.0	Irish Free State . . .	1929	19.8
Rumania . . .	1928	35.9	U.S. of America (b) . .	1928	19.7
Japan . . .	1928	34.4	Denmark . . .	1928	19.6
Poland . . .	1929	32.6	Scotland . . .	1929	19.0
Argentina . . .	1928	29.8	Victoria . . .	1929	19.0
Spain . . .	1928	29.7	New Zealand . . .	1928	19.0
Italy . . .	1928	26.1	Germany . . .	1929	18.6
Union of South Africa (whites) . . .	1928	25.9	South Australia . . .	1929	18.4
Canada . . .	1929	24.0	Belgium . . .	1928	18.4
Czecho-Slovakia . .	1928	23.3	France . . .	1928	18.2
Netherlands . . .	1928	23.3	Norway . . .	1928	18.0
Tasmania . . .	1929	22.4	Switzerland . . .	1928	17.3
Western Australia . .	1929	22.0	Great Britain and Northern Ireland . . .	1928	17.2
New South Wales . .	1929	21.4	England and Wales . .	1929	16.3
Queensland . . .	1929	20.0	Sweden . . .	1928	16.1

(a) Number of births per 1,000 of the mean population.
tration area."

(b) Figures for "existing birth-regis-

(ii) *Nuptial Birth Rates at Child-bearing Ages.* The wide discrepancies between the crude birth rates of the various countries are, to some extent, due to differences in sex and age constitution and in conjugal condition. If the birth rates be calculated per 1,000 women of child-bearing ages, the comparison gives more reliable results. A table of results so calculated appeared in the previous Year Book, p. 941, and showed that Australia, with a rate of 193 nuptial births per 1,000 married women aged 15 to 49 years, was midway between the maximum and minimum of the countries for which these rates were obtained.

4. *Masculinity of Births.*—(i) *General.* The masculinity of births, i.e., the excess of males over females per 100 births registered for each State, during recent years varied from 0.32 in Tasmania in 1924 to 4.15 in the same State in 1929. On account of the smallness of the numbers, the returns from the Northern Territory and the Federal Capital Territory have not been taken into consideration.

Although the general tendency of the change in the sex composition of the ex-nuptial births has been the same as in the total births, the results in the smaller States do not show the same consistency in the former as in the latter on account of the relatively small numbers involved.

MASCUILITY(a) OF BIRTHS REGISTERED, 1929.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Ter.	Fed. Cap. Ter.	Australia.
Total Births	2.77	3.52	2.61	3.59	0.50	4.15	20.75	3.27	2.91
Ex-nuptial Births ..	3.19	1.78	2.39	7.84	1.36	-0.85	33.33	-20.00	2.73

(a) Excess of males over females per 100 total ex-nuptial births.

NOTE.—The minus sign (—) denotes an excess of females over males per 100 total ex-nuptial births.

(ii) *Masculinity of Nuptial and Ex-nuptial Births—Various Countries.* A table showing the masculinity of nuptial and ex-nuptial births for various countries appeared on p. 942 of the previous issue of this Year Book. It is, however, not proposed to repeat the table in this issue.

5. *Ex-nuptial Births.*—(i) *General.* The number of ex-nuptial births reached its maximum, 7,438, in 1913, but it has since fallen considerably. On the average of the five years 1910–14, the number of ex-nuptial births in Australia was 7,171, while for the period 1925–29 it was only 6,259, a decline of 12.7 per cent., whereas the annual average total births for the same period increased by 3 per cent.; hence a comparison between the results for these two periods shows that the proportion of ex-nuptial births has fallen from 5.55 to 4.70 per cent. of all births.

It is, of course, possible that the number of ex-nuptial births is somewhat understated, owing to diffidence in proclaiming the fact of ex-nuptiality, and it is not unlikely that the majority of unregistered births are ex-nuptial.

EX-NUPTIAL BIRTHS AND BIRTH RATE, 1929.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Capital Territory.	Australia.
Number ..	2,727	1,460	963	319	369	236	9	5	6,088
Percentage on Total Births ..	5.18	4.34	5.21	2.99	4.08	4.92	16.98	3.27	4.70

(ii) *Rate of Ex-nuptiality.* The rate of ex-nuptiality, i.e., the percentage of ex-nuptial on total births has increased slightly in recent years to 4.70 per cent. of total births.

A better comparison is obtained by calculating the number of ex-nuptial births per thousand of the single and widowed female population between the ages of 15 and 45. The number of ex-nuptial births per 1,000 unmarried women of ages 15 to 45 has been found to be as follows:—Years 1880–82, 14.49; years 1890–92, 15.93; years 1900–02, 13.30; years 1910–12, 12.53; and years 1920–22, 10.50. The comparative results given in the previous issue were taken from the *Annuaire International de Statistique*, Vols. II. and V., and showed that ex-nuptial births varied from 38 per 1,000 unmarried women aged 15 to 49 years in Hungary to 4 in Ireland and Bulgaria. The rate for Australia was 12 per thousand.

(iii) *Comparison of Rates.* The following table shows the relative proportions of ex-nuptial and nuptial births to the total population during the last five years:—

CRUDE EX-NUPTIAL, NUPTIAL, AND TOTAL BIRTH RATES(a).—AUSTRALIA, 1925 TO 1929.

Rates.	1925.	1926.	1927.	1928.	1929.
Ex-nuptial	1.06	1.07	1.02	1.01	0.95
Nuptial	21.83	20.95	20.65	20.32	19.36
Total	22.89	22.02	21.67	21.33	20.31

(a) Number of births per 1,000 of mean population.

6. *Legitimations.*—In the several States Acts have been passed to legitimize children born before the marriage of their parents, provided that no legal impediment to the marriage existed at the time of birth. On registration in accordance with the provisions of the Legitimation Acts, any child who comes within the scope of its intentions, born before or after the passing thereof, is deemed to be legitimized from birth by the post-natal union of its parents, and entitled to the status of offspring born in wedlock. (During 1929, 891 children were legitimated in Australia.)

7. *Multiple Births.*—Among the total number of 129,480 births registered in Australia in 1929, there were 126,859 single births, 2,594 twins, and 27 triplets. The number of cases of twins was 1,311, there being 26 stillbirths, and there were 9 cases of triplets, including one stillbirth. The total number of mothers was, therefore, 128,179; the proportion of mothers of twins being one in every 98, of mothers of triplets one in every 14,242 of total mothers, and of all multiple births one in every 97 mothers. Multiple births occurred in 1.03 per cent of confinements.

8. Ages of Parents.—(i) *Single Births.* The relative ages of the parents of children registered in 1929 have been tabulated separately for male and female births, twins and triplets being distinguished from single births, and are shown for single ages in the Bulletin of "Australian Demography," No. 47, published by this Bureau. In the present work the exigencies of space allow only the insertion of corresponding tables showing the relative ages of parents in groups of five years.

AGES OF PARENTS IN CASES OF SINGLE BIRTHS.—AUSTRALIA, 1929.

Ages of Fathers and Sexes of Children.		Total Children.	Ages of Mothers.								Un-specified.
			Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.	
Under 20	Males..	457	3	348	100	5	1	..	..	..	..
	Females	389	1	291	92	5	..	..	..	..	..
	Total ..	846	4	639	192	10	1	..	..	..	..
20 to 24	Males..	8,079	4	1,949	5,146	882	85	10	3	..	..
	Females	7,579	1	1,889	4,783	795	97	11	3	..	..
	Total ..	15,658	5	3,838	9,929	1,677	182	21	6	..	..
25 to 29	Males..	16,631	..	885	6,885	7,383	1,331	181	16	..	..
	Females	15,540	..	794	6,443	6,891	1,229	163	19	1	..
	Total ..	32,171	..	1,629	13,328	14,274	2,560	344	35	1	..
30 to 34	Males..	14,545	1	188	2,195	5,935	5,242	906	72	6	..
	Females	13,713	..	188	2,109	5,616	4,854	868	76	2	..
	Total ..	28,258	1	376	4,304	11,551	10,096	1,774	148	8	..
35 to 39	Males..	11,411	..	51	637	2,385	4,361	3,550	416	10	1
	Females	10,755	..	43	668	2,357	3,925	3,354	399	9	..
	Total ..	22,166	..	94	1,305	4,742	8,286	6,904	815	19	1
40 to 44	Males..	6,713	..	20	187	767	1,700	2,679	1,323	37	..
	Females	6,364	..	25	195	663	1,676	2,507	1,266	32	..
	Total ..	13,077	..	45	382	1,430	3,376	5,186	2,589	69	..
45 to 49	Males..	2,925	..	10	74	221	535	1,044	903	138	..
	Females	2,806	..	5	67	238	487	1,034	841	134	..
	Total ..	5,731	..	15	141	459	1,022	2,078	1,744	272	..
50 to 54	Males..	993	..	1	18	65	157	303	382	67	..
	Females	963	..	2	17	60	153	304	361	66	..
	Total ..	1,956	..	3	35	125	310	607	743	133	..
55 to 59	Males..	325	..	1	5	36	52	95	110	26	..
	Females	365	..	3	8	27	48	128	121	30	..
	Total ..	690	..	4	13	63	100	223	231	56	..
60 to 64	Males..	112	..	1	4	7	15	49	28	8	..
	Females	109	..	..	..	4	23	36	37	9	..
	Total ..	221	..	1	4	11	38	85	65	17	..
65 and upwards	Males..	58	..	..	1	2	18	14	18	5	..
	Females	52	..	..	3	6	7	18	14	4	..
	Total ..	110	..	..	4	8	25	32	32	9	..
Un-specified	Males..	4	..	..	..	2	..	..	2	..	..
	Females	3	..	1	1	..	..	1	..	..	..
	Total ..	7	..	1	1	2	..	1	2	..	..
Nuptial children	Males..	62,253	8	3,404	15,252	17,690	13,497	8,831	3,273	297	1
	Females	58,638	2	3,241	14,386	16,662	12,499	8,424	3,137	287	..
	Total ..	120,891	10	6,645	29,638	34,352	25,996	17,255	6,410	584	1
Ex-nuptial children	Males..	3,073	19	943	1,012	459	321	216	90	12	1
	Females	2,895	25	935	968	416	246	211	88	4	2
	Total ..	5,968	44	1,878	1,980	875	567	427	178	16	3
Total children	Males..	65,326	27	4,347	16,264	18,149	13,818	9,047	3,363	303	2
	Females	61,533	27	4,176	15,354	17,078	12,745	8,635	3,225	291	2
	Total ..	126,859	54	8,523	31,618	35,227	26,563	17,682	6,588	600	4

(ii) *Twins.* The ages of parents of twins in 1929 are given hereunder :—

AGES OF PARENTS OF TWINS.—AUSTRALIA, 1929.

Ages of Fathers and Sexes of Children.			Total Children.	Ages of Mothers.						
				Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and over.
Under 20	{ Males	..	5	2	3	..	..	..	..	..
	{ Females	..	5	4	1	..	..	..	..	..
	{ Total	..	10	6	4	..	..	..	..	..
20 to 24	{ Males	..	78	9	54	11	4	..	..	..
	{ Females	..	93	14	60	15	4	..	..	..
	{ Total	..	171	(c) 23	(b) 114	26	8	..	..	..
25 to 29	{ Males	..	272	6	86	146	29	5	..	..
	{ Females	..	234	6	77	161	37	3	..	..
	{ Total	..	556	12	(a) 163	(a) 307	66	8	..	..
30 to 34	{ Males	..	341	..	40	125	134	35	7	..
	{ Females	..	309	..	28	129	122	29	1	..
	{ Total	..	650	..	68	(b) 254	(b) 256	64	8	..
35 to 39	{ Males	..	256	..	3	46	100	104	3	..
	{ Females	..	240	..	3	40	94	96	7	..
	{ Total	..	496	..	6	(b) 86	194	(d) 200	10	..
40 to 44	{ Males	..	172	2	..	6	45	80	39	..
	{ Females	..	178	..	4	14	52	70	38	..
	{ Total	..	350	2	4	20	(a) 97	(b) 150	(a) 77	..
45 to 49	{ Males	..	82	..	2	5	19	33	23	..
	{ Females	..	94	..	2	9	13	49	15	6
	{ Total	..	176	..	4	14	32	(d) 82	38	6
50 to 54	{ Males	..	16	..	..	..	6	4	6	..
	{ Females	..	33	..	..	2	4	10	17	..
	{ Total	..	49	..	..	2	10	14	(a) 23	..
55 to 59	{ Males	..	7	..	..	..	2	5	..	..
	{ Females	..	3	..	..	..	..	3	..	..
	{ Total	..	10	..	..	..	2	8	..	..
60 and over..	{ Males	..	3	..	..	..	..	1	2	..
	{ Females	..	3	..	..	..	..	1	2	..
	{ Total	..	6	..	..	..	..	2	4	..
Nuptial Children	{ Males	..	1,232	19	188	339	339	267	80	..
	{ Females	..	1,242	24	175	370	326	261	80	6
	{ Total	..	2,474	43	363	709	665	528	160	6
Ex-nuptial Children	{ Males	..	54	4	18	9	12	5	6	..
	{ Females	..	66	8	13	13	12	16	4	..
	{ Total	..	120	12	(a) 31	22	24	(a) 21	10	..
Total Children	{ Males	..	1,286	23	206	348	351	272	86	..
	{ Females	..	1,308	32	188	383	338	277	84	6
	{ Total	..	2,594	55	394	731	689	549	170	6

(a) One stillborn twin not included.
(b) Two stillborn twins not included.(c) Three stillborn twins not included.
(d) Four stillborn twins not included.

(iii) *Triplets*. Particulars regarding the ages of parents in case of triplets are given in the next table :—

AGES OF PARENTS OF TRIPLETS.—AUSTRALIA, 1929.

Ages of Fathers and Sexes of Children.			Total Children.	Ages of Mothers.				
				20.	26.	28.	29.	37.
22	..	.. M.	3	3	..	..	..	..
29	..	.. F.	3	..	..	..	3	..
30	..	.. {M.	3	..	1	2	..	..
		.. {F.	3	..	2	1	..	..
34	..	.. {M.	2	..	..	..	2	..
		.. {F.	1	..	..	..	1	..
36	..	.. F.	3	..	..	..	3	..
39	..	.. {M.	2	..	..	..	..	2
		.. {F.	4	..	..	..	..	4
43	..	.. {M.	1	..	..	..	..	1
		.. {F.	2	..	..	..	..	2
Total	Nuptial	Child- {M.	11	3	1	2	2	3
ren	..	.. {F.	16	..	2	1	7	6

9. *Birthplaces of Parents*.—The relative birthplaces of the parents of children whose births were registered during the year 1929 will be found in the Bulletin of "Australian Demography," published by this Bureau. A summary of the results of the tabulation is given hereunder.

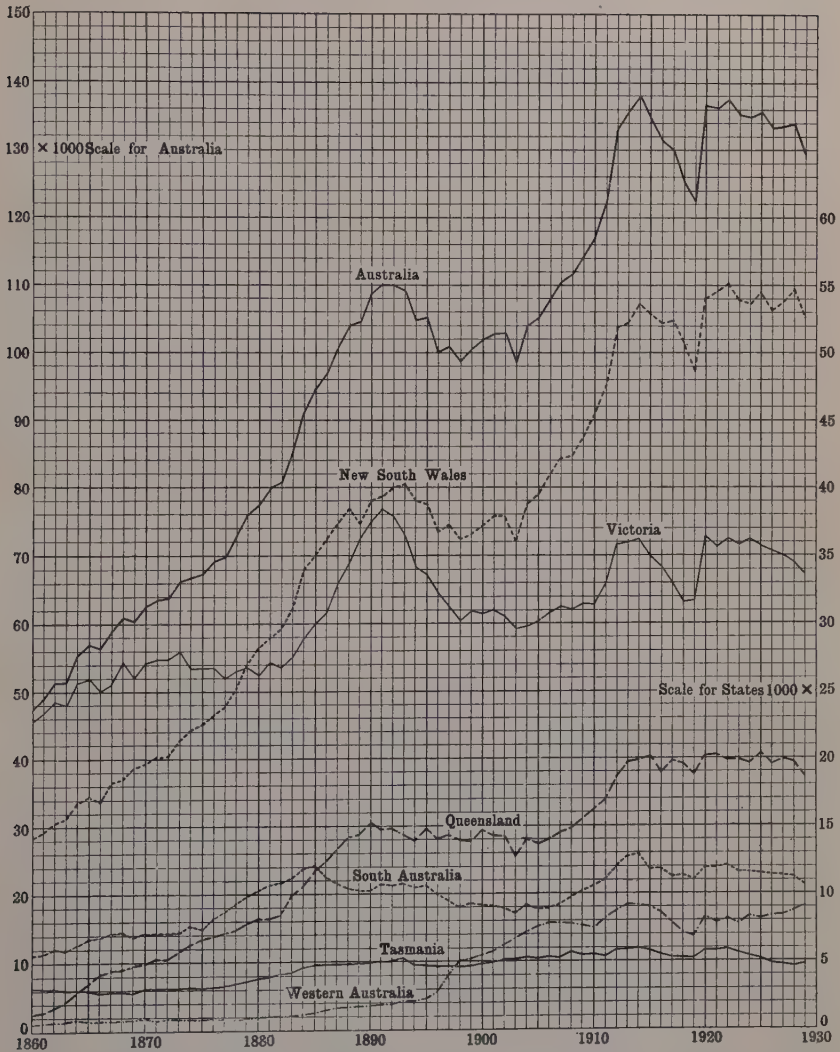
BIRTHPLACES OF PARENTS.—AUSTRALIA, 1929.

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.
AUSTRALASIA—									
New South Wales ..	39,572	413	2	41,219	421	2	2,293	26	..
Victoria ..	29,547	324	2	29,185	316	3	1,276	17	..
Queensland ..	13,054	108	..	14,485	124	..	865	4	..
South Australia ..	9,485	89	2	9,345	86	1	266	3	..
Western Australia ..	3,994	36	..	5,099	47	..	267	..	..
Tasmania ..	5,495	45	1	5,437	44	1	337	4	..
Northern Territory	38	1	..	34	1	..	11	..	..
Federal Capital Territory ..	16	..	..	16	..	..	1	..	..
New Zealand ..	925	6	..	749	14	..	68	..	..

BIRTHPLACES OF PARENTS.—AUSTRALIA, 1929—*continued*.

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip- lets.	Single Births.	Twins.	Trip- lets.	Single Births.	Twins.	Trip- lets.
EUROPE—									
England and Wales	11,248	129	2	9,604	123	2	389	6	..
Scotland ..	3,043	44	..	2,635	39	..	101	1	..
Ireland ..	1,201	16	..	892	10	..	32	..	..
Other British Pos- sessions in Europe	158	3	..	117	1	..	3	..	..
Denmark ..	69	1	..	20	..	..	1	..	..
Finland ..	32	2	..	6	..	..	2	..	..
France ..	50	1	..	47	1	..	3	..	..
Germany ..	289	5	..	133	2	..	7	..	..
Greece ..	290	3	..	213	2	..	..	..	..
Italy ..	728	6	..	592	4	..	7	..	..
Jugo-Slavia ..	66	..	..	54	..	..	1	..	..
Netherlands ..	53	..	..	15	..	..	..	..	..
Norway ..	83	2	..	10	..	..	..	..	..
Poland ..	63	..	..	40	..	..	2	..	..
Russia ..	153	2	..	108	2	..	2	..	..
Sweden ..	75	1	..	8	..	..	..	..	..
Switzerland ..	52	..	..	30	..	..	2	..	..
Other Countries in Europe ..	160	3	..	78	2	..	1	..	..
ASIA—									
British India and Ceylon ..	128	3	..	94	1	..	2	..	..
China ..	76	1	..	24	..	..	..	..	..
Japan ..	17	..	..	15	..	..	..	..	..
Syria ..	117	4	..	86	3	..	1	..	..
Other Countries in Asia ..	38	..	..	27	..	..	..	..	..
AFRICA—									
Union of South Africa ..	177	..	..	192	3	..	5	..	..
Other African Countries ..	30	..	..	21	..	..	..	..	..
AMERICA—									
Canada ..	98	..	..	44	..	..	4	..	..
United States of America ..	147	1	..	114	2	..	4	..	..
Other American Countries ..	38	..	..	28	1	..	3	..	..
POLYNESIA—									
Fiji ..	21	..	..	19	..	..	..	..	..
New Caledonia ..	12	..	..	20	..	..	2	..	..
New Hebrides ..	2	..	..	..	..	..	1	..	..
Other Polynesian Islands ..	14	..	..	15	..	..	..	..	..
At Sea ..	33	..	..	11	..	..	..	..	..
Unspecified ..	4	1	..	10	1	..	9	..	..
Total ..	120,891	1,250	9	120,891	1,250	9	5,968	61	..

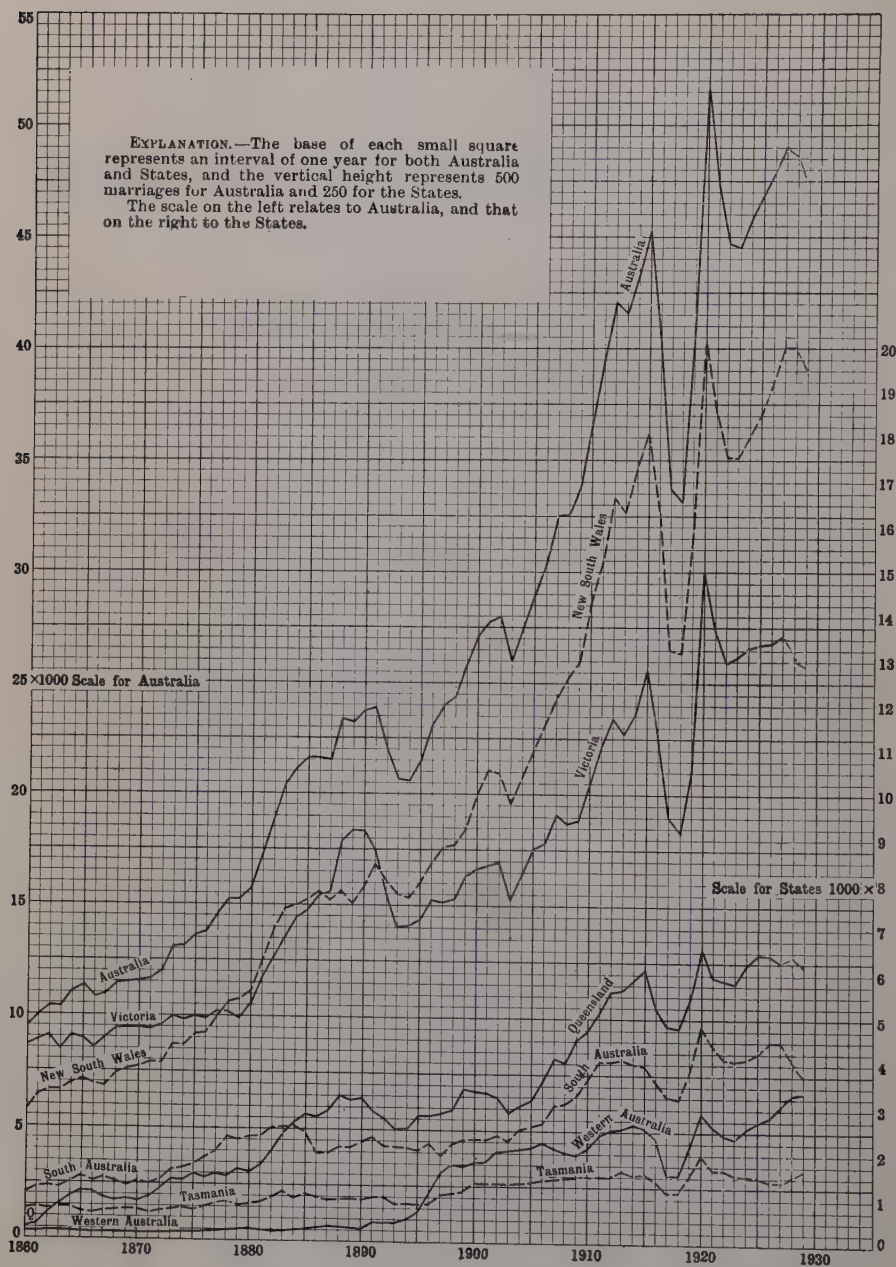
BIRTHS—1860 TO 1929.



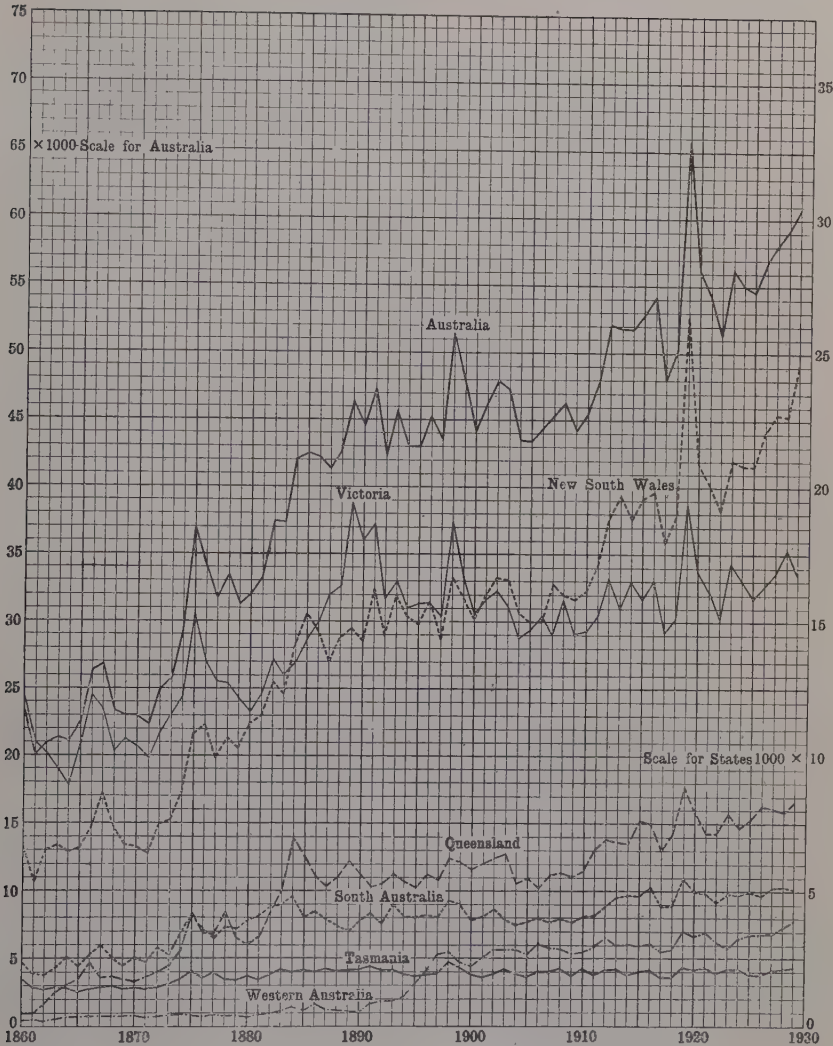
EXPLANATION.—The base of each small square represents an interval of one year for both Australia and States, and the vertical height represents 2,000 persons for Australia and 1,000 for the States.

The scale on the left relates to Australia, and that on the right to the States.

MARRIAGES, 1860 TO 1929.



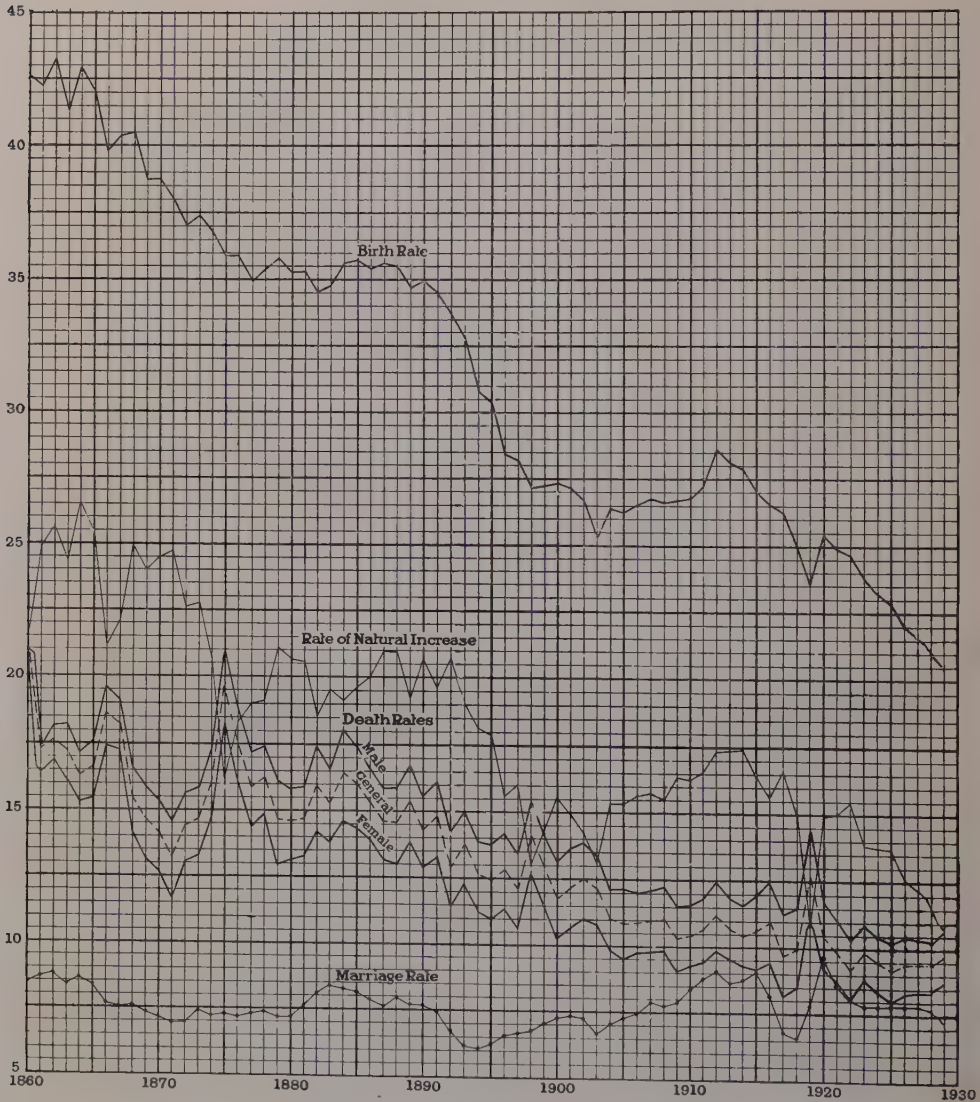
DEATHS—1860 TO 1929.



EXPLANATION.—The base of each small square represents an interval of one year for both Australia and States, and the vertical height represents 1,000 persons for Australia and 500 for the States.

The scale on the left relates to Australia, and that on the right to the States.

RATES—BIRTH, NATURAL INCREASE, DEATH (MALE, GENERAL AND FEMALE) AND MARRIAGE—
AUSTRALIA, 1860 TO 1929.



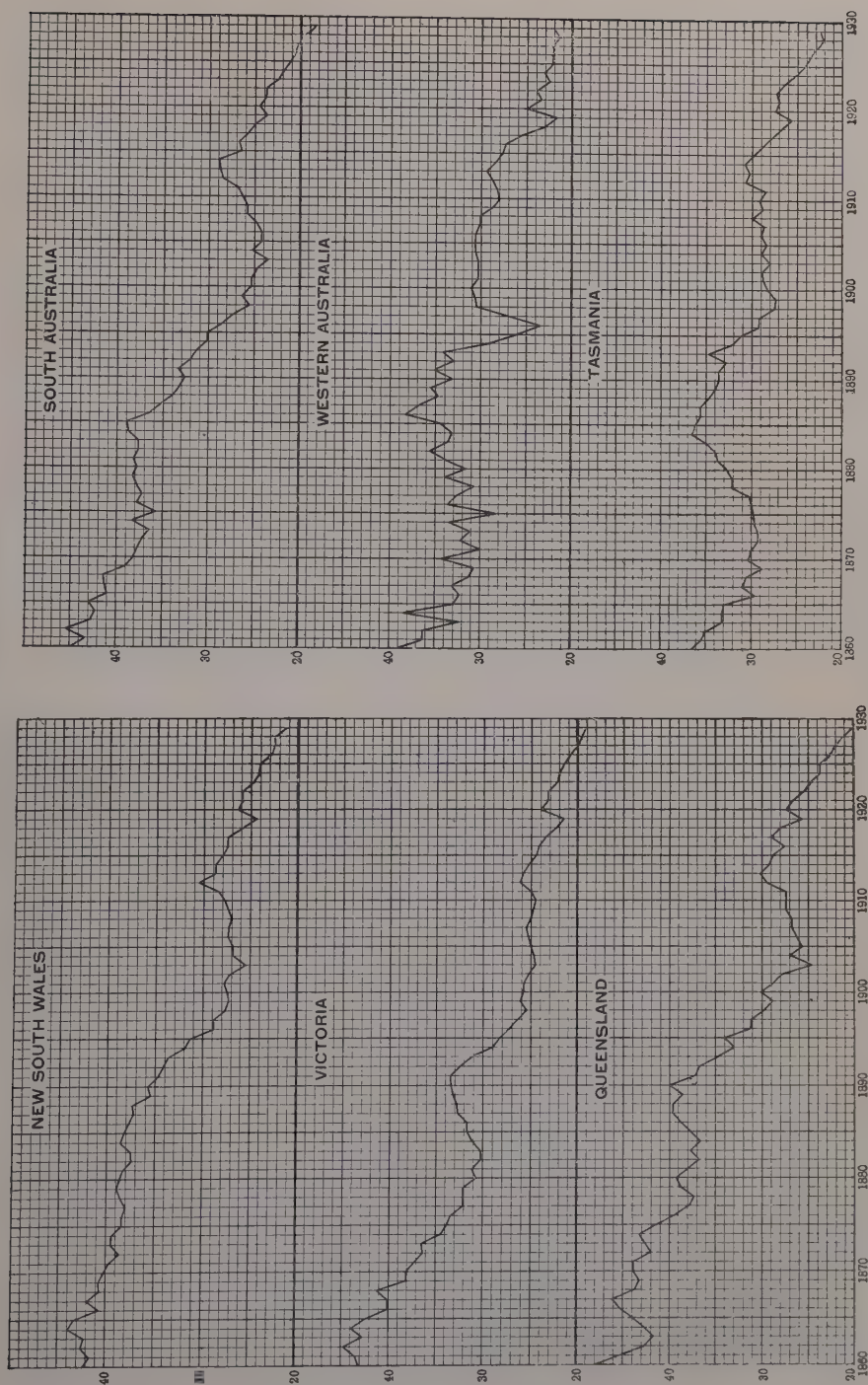
EXPLANATION.—The base of each small square represents one year's interval, and the vertical height one half per thousand of the population—the basic line being five per thousand of the population.

STATE BIRTH-RATE GRAPHS. (See page 709.)

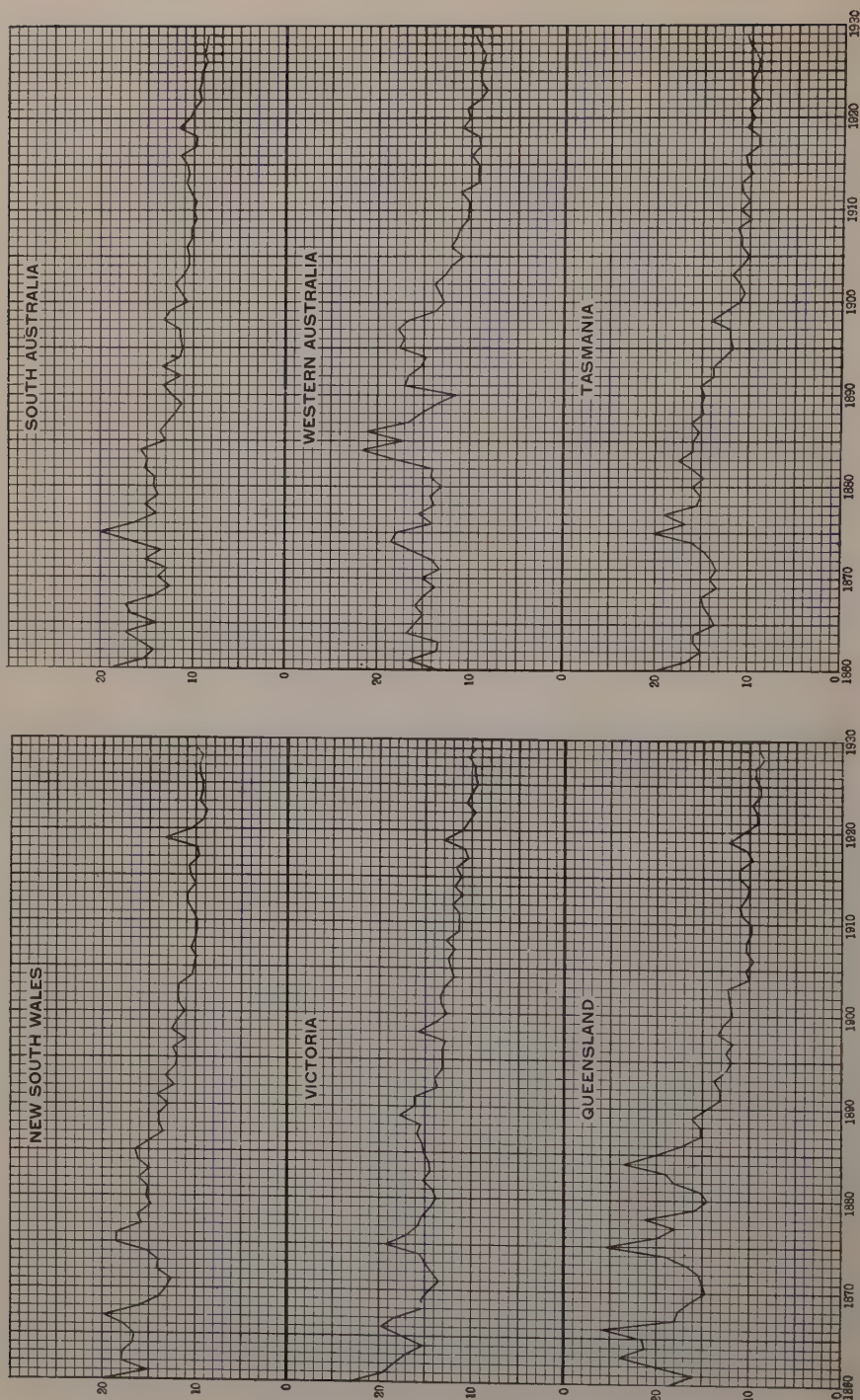
EXPLANATION.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

STATE DEATH-RATE GRAPHS. (See page 710.)

EXPLANATION.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shown by a thickened line.



For explanation of above graph see page 708.



For explanation of above graph see page 708.

10. Occupations of Fathers.—A summary of the main groups of occupations of the fathers of all nuptial children whose births were registered in 1929 and the percentage of each class on the total are given in the following table:—

OCCUPATIONS OF FATHERS OF NUPTIAL CHILDREN.—AUSTRALIA, 1929.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
CLASS I.—PROFESSIONAL.		CLASS V.—INDUSTRIAL.	
Government, Defence, Law ..	2,547	Art and Mechanic Productions ..	6,588
Others	3,719	Textiles and Fibrous Materials ..	1,644
Total Class I. ..	6,266	Food and Drinks ..	2,247
Percentage on Total Fathers	5.13	Animal and Vegetable Substances	674
CLASS II.—DOMESTIC.		Paper	42
Board and Lodging	1,087	Metals and Minerals	2,843
Others	1,026	Fuel, Light, and Energy ..	1,265
Total Class II. ..	2,113	Building and Construction ..	7,156
Percentage on Total Fathers	1.73	Others	31,238
CLASS III.—COMMERCIAL.		Total Class V. ..	53,697
Property and Finance ..	1,396	Percentage on Total Fathers	43.96
Art, Mechanic, and Textile Products	1,020	CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Food and Drinks	3,938	Agricultural	18,385
Animal and Vegetable Substances	453	Pastoral	4,923
Fuel, Light, and Metals ..	286	Mining and Quarrying ..	2,425
Merchants and Dealers ..	2,487	Others	1,300
Others	7,798	Total Class VI. ..	27,033
Total Class III. ..	17,378	Percentage on Total Fathers	22.13
Percentage on Total Fathers	14.23	CLASS VII.—INDEFINITE.	
CLASS IV.—TRANSPORT AND COMMUNICATION.		Independent Means	292
Railway Traffic	4,802	Occupation Unspecified ..	88
Road and Tramway Traffic ..	7,443	Total Class VII. ..	380
Sea and River Traffic ..	1,289	Percentage on Total Fathers	0.31
Others	1,749	TOTAL	122,150
Total Class IV. ..	15,283		
Percentage on Total Fathers	12.51		

11. Mother's Age, Duration of Marriage, and Issue.—(i) *General.* The total number of nuptial confinements in 1929 was 122,150, viz., 120,891 single births, 1,250 cases of twins, and 9 cases of triplets, but in 37 cases the necessary information was lacking, and the following series of tables refers therefore, to 122,113 nuptial confinements. Ex-nuptial children—previous issue by the same father—are included as previous issue, but children by former marriages, and stillborn children are excluded. The tables cannot be given *in extenso*, but the following are their most salient features. The complete tabulations are shown in "Australian Demography," No. 47.

(ii) *Duration of Marriage and Issue of Mothers.* The following table shows that the duration of marriage of mothers of nuptial children ranged from less than one year up to between 31 and 32 years, and that the average family increased fairly regularly with the duration of marriage. The average number of children of all marriages was 2.96 the corresponding figures for 1928 being 2.99; for 1927, 3.03; for 1926, 3.06; and for 1925, 3.10.

DURATION OF MARRIAGE AND ISSUE OF MOTHERS.—AUSTRALIA, 1929.

Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.	Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.
Years.				Years.			
0-1 ..	20,233	20,687	1.02	18-19 ..	1,334	9,804	7.35
1-2 ..	13,437	17,226	1.28	19-20 ..	1,054	8,341	7.91
2-3 ..	12,503	22,296	1.78	20-21 ..	775	6,133	7.91
3-4 ..	10,366	22,000	2.12	21-22 ..	633	5,358	8.46
5-5 ..	9,016	22,403	2.48	22-23 ..	425	3,851	9.06
6-6 ..	7,794	21,699	2.78	23-24 ..	292	2,716	9.30
7-7 ..	6,737	21,278	3.16	24-25 ..	218	2,202	10.10
8-8 ..	6,047	20,890	3.45	25-26 ..	131	1,359	10.37
9-9 ..	5,699	21,642	3.80	26-27 ..	71	691	9.73
9-10 ..	5,256	21,742	4.14	27-28 ..	31	318	10.26
10-11 ..	3,872	17,468	4.51	28-29 ..	20	235	11.75
11-12 ..	2,929	13,991	4.78	29-30 ..	11	124	11.27
12-13 ..	2,563	12,975	5.06	30-31 ..	8	91	11.38
13-14 ..	2,608	13,782	5.28	31-32 ..	1	5	5.00
14-15 ..	2,421	13,942	5.76	32-33 ..	..	..	..
15-16 ..	2,163	13,261	6.13				
16-17 ..	1,857	12,199	6.57				
17-18 ..	1,608	10,999	6.84	Total ..	122,113	361,708	2.96

(iii) *Ages of Mothers and Issue.* The ages of mothers, issue, and average family are given in the following table, which shows that the average family increased fairly regularly to a maximum of 7.48 children in the age-group 45 years and over, and that the greatest number of mothers occurs in the group 25 to 29 years.

AGES AND ISSUE OF MOTHERS.—AUSTRALIA, 1929.

Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.	Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.
Under 20 years	6,678	8,084	1.21	40-44 years ..	6,483	39,947	6.16
20-24 years ..	29,822	51,456	1.73	45 yrs. and over	586	4,383	7.48
25-29 „ ..	34,707	85,336	2.46				
30-34 „ ..	26,316	90,759	3.45				
35-39 „ ..	17,521	81,743	4.67	All ages ..	122,113	361,708	2.96

(iv) *Previous Issue of Mothers, Various Ages.* The previous issue, according to the age of the mother, is given in the following table.

PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES.—AUSTRALIA, 1929.

Previous Issue.	Mothers' Ages.							Total.
	Under 20 Years.	20-24 Years.	25-29 Years.	30-34 Years.	35-39 Years.	40-44 Years.	45 Years and Over.	
0	5,420	15,454	10,853	4,276	1,700	408	41	38,152
1	1,137	9,191	10,011	5,833	2,358	441	18	28,989
2	115	3,674	6,447	5,140	2,691	645	30	18,742
3	5	1,166	4,020	4,114	2,643	718	47	12,713
4	1	286	2,110	2,893	2,279	728	52	8,349
5	..	39	877	1,940	1,716	705	54	5,331
6	..	8	280	1,133	1,419	684	49	3,573
7	..	4	82	564	1,149	641	55	2,495
8	..	..	20	257	740	494	53	1,564
9	..	..	7	103	418	356	59	943
10	..	..	..	45	232	286	41	604
11	..	..	..	11	114	206	37	368
12	..	..	..	6	37	88	26	157
13	..	..	..	1	16	46	12	75
14	..	..	..	..	8	25	7	40
15	..	..	..	..	1	8	2	11
16	..	..	..	..	..	2	2	4
17	..	..	..	..	..	2	..	2
18	..	..	..	..	..	..	1	1
Total Mothers	6,678	29,822	34,707	26,316	17,521	6,483	586	122,113

(v) *Previous Issue of Mothers of Twins and Triplets.* Figures regarding the previous issue of mothers of twins and triplets show that 281 mothers had twins at their first confinement; 283 at their second; 188 at their third; 154 at their fourth; 115 at their fifth; 92 at their sixth; 51 at their seventh; 34 at their eighth; 23 at their ninth; 16 at their tenth; 8 at their eleventh; 2 at their twelfth; 2 at their thirteenth; and 1 at her fifteenth.

Of the 9 cases of triplets registered during 1929, 2 were second confinements, 2 were third, 3 were fourth, and 1 each at the sixth and eighth.

12. *Interval between Marriage and First Birth.*—(i) *Interval and Sex of Children.* The following table shows the interval between marriage and first birth, distinguishing the sexes of the children. Twins and triplets are included, the eldest born only being enumerated:—

INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH.—AUSTRALIA, 1929.

Interval.	Number of First Children.			Interval.	Number of First Children.		
	Males.	Females.	Total.		Males.	Females.	Total.
Under 1 month	193	161	354	Total under			
1 month ..	259	238	497	1 year ..	10,339	9,645	19,984
2 months ..	383	359	742	1-2 years ..	5,114	4,808	9,922
3 " ..	545	533	1,078	2-3 " ..	1,909	1,764	3,673
4 " ..	785	672	1,457	3-4 " ..	912	891	1,803
5 " ..	1,056	1,036	2,092	4-5 " ..	521	470	991
6 " ..	1,391	1,291	2,682	5-9 " ..	745	743	1,488
7 " ..	1,092	1,057	2,149	10-14 " ..	134	103	237
8 " ..	777	748	1,525	15-19 " ..	17	25	42
9 " ..	1,598	1,460	3,058	20 and over..	9	3	12
10 " ..	1,247	1,166	2,413				
11 " ..	1,013	924	1,937	Total ..	19,700	18,452	38,152

The masculinity of first births was 3.27 as compared with 2.91 for total births.

(ii) *Ages of Mothers and Interval.* The previous issue of mothers of ex-nuptial children is not recorded, but for the purposes of the following table all ex-nuptial births have been assumed to be first births. The table shows in a condensed form the ages of mothers in the cases of ex-nuptial first births, of nuptial first births occurring less than nine months after marriage, and of nuptial first births occurring nine months or more after marriage. A comparison of the combined total of the first two columns with the total of nuptial children born nine months or more after marriage shows that for all ages the ratio was about 2 to 3. At all ages up to and including 21, however, there was a great preponderance of ex-nuptial births and of births following on ante-nuptial conception. It must, of course, be understood that a certain number of premature births is necessarily included among the births which occurred less than nine months after marriage, but information in connexion therewith is not available. The tabulation in single ages of mothers appears in Demography Bulletin No. 47.

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, ETC.—AUSTRALIA, 1929.

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial First Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
Under 20 years	1,928	3,981	5,909	1,439	5,420	7,348
20 to 24 years	1,996	6,040	8,036	9,414	15,454	17,450
25 to 29 "	886	1,785	2,671	9,068	10,853	11,739
30 to 34 "	579	500	1,079	3,776	4,276	4,855
35 to 39 "	438	207	645	1,493	1,700	2,138
40 to 44 "	183	56	239	352	408	591
45 and over ..	16	6	22	35	41	57
Unspecified ..	3	..	3	..	..	3
Total ..	6,029	12,575	18,604	25,577	38,152	44,181

13. *Interval between Birth and Registration of Birth.*—Information was obtained for the years 1911 to 1921 regarding the period which elapsed between birth and registration. A detailed table giving the results for 1921 is contained in Demography Bulletin No. 39, issued by this Bureau. The law relating to maternity allowances has tended to accelerate the registration of births; and during the year under review it was found that approximately 35 per cent. were registered in the first week.

Since the granting of the maternity allowance the weighted average interval between the dates of birth and registration has been found to be about 13 days for all children.

§ 2. Marriages.

1. *Marriages, 1929.*—The number of marriages registered in Australia during 1929 was 47,500, giving a rate of 7.45 per 1,000 of the mean population for the year. The number of marriages in each State, together with the corresponding crude marriage rate, are given hereunder :—

MARRIAGES, 1929.

—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Australia.
No. ..	19,535	12,935	6,169	3,719	3,367	1,712	20	43	47,500
Crude Rate (a) ..	7.93	7.31	6.67	6.42	8.18	8.01	4.79	5.13	7.45

(a) Number of marriages (not persons married) per 1,000 of mean annual population.

As in some international tabulations the marriage rates are calculated per 1,000 of the unmarried population of 15 years and over, the corresponding rates have been worked out for Australia for the last four Census periods for which the particulars are available. The figures comprise in each case the Census year with the year immediately preceding and the year immediately following, and are as follows:—Years 1880–82, 48.98; years 1890–92, 45.74; years 1900–02, 42.14; years 1910–12, 50.44; and years 1920–22, 56.02. These rates refer, of course, to persons married and not to marriages, as is the case in the preceding table.

2. Marriage Rates in Various Countries.—The following table shows the marriage rate for Australia in comparison with various other countries:—

CRUDE MARRIAGE RATES (a).—VARIOUS COUNTRIES.

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Soviet Republics ..	1926	10.6	Great Britain and Northern Ireland..	1928	7.6
United States (b) ..	1926	10.2	Denmark ..	1927	7.6
Rumania ..	1927	9.8	Spain ..	1928	7.6
Poland ..	1923	9.8	Australia ..	1929	7.5
Union of South Africa (c)	1928	9.4	Switzerland ..	1928	7.5
Czecho-Slovakia ..	1928	9.3	Victoria ..	1929	7.3
Germany ..	1928	9.2	Italy ..	1928	7.0
Belgium ..	1928	8.9	Scotland ..	1929	6.8
France ..	1928	8.3	Queensland ..	1929	6.7
Western Australia ..	1929	8.2	Sweden ..	1928	6.7
Tasmania ..	1929	8.0	South Australia ..	1929	6.4
Japan ..	1927	8.0	Ceylon ..	1928	6.1
New South Wales ..	1929	7.9	Norway ..	1928	6.0
England and Wales ..	1929	7.9	Northern Ireland ..	1928	5.8
Canada ..	1929	7.9	Irish Free State ..	1929	4.5
New Zealand ..	1929	7.8			
Netherlands ..	1928	7.7			

(a) Number of marriages per 1,000 of mean population.
(c) White population only.

(b) Registration area.

3. Ages and Conjugal Condition at Marriage.—(i) *General.* The ages at marriage of bridegrooms and brides will be found in "Australian Demography," Bulletin No. 47. A summary in age groups is given in the table hereunder, which also shows the previous conjugal condition of the contracting parties. There were 2,674 males who were less than twenty-one years of age married during 1929, while the corresponding number of females was 11,274. At the other extreme there were 60 men of sixty-five years and upwards, who described themselves as bachelors, and 10 spinsters of corresponding age.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED.—AUSTRALIA, 1929.

Ages at Marriage.	Bridegrooms.				Brides.			
	Bachelors.	Widowers.	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
Under 20	1,297	..	..	1,297	7,982	3	1	7,986
20-24 years	15,672	26	9	15,707	20,564	51	57	20,672
25-29 "	15,686	157	94	15,937	9,976	185	220	10,381
30-34 "	6,070	310	168	6,548	3,289	292	267	3,848
35-39 "	2,672	426	228	3,326	1,480	376	241	2,097
40-44 "	1,260	428	166	1,854	607	339	138	1,084
45-49 "	626	398	102	1,126	332	299	64	695
50-54 "	244	293	59	596	120	186	26	332
55-59 "	139	271	27	437	59	114	12	185
60-64 "	64	233	17	314	20	99	3	122
65 years and over	60	292	4	356	10	85	2	97
Unspecified	2	..	..	2	1	..	..	1
Total ..	43,792	2,834	874	47,500	44,440	2,029	1,031	47,500

(ii) *Relative Ages, Bridegrooms and Brides.* The relative ages of bridegrooms and brides are shown for single years in "Australian Demography," Bulletin No. 47; a condensation into age-groups of five years is given below :—

RELATIVE AGES OF PERSONS MARRIED.—AUSTRALIA, 1929.

Ages.		Ages of Brides.									
		Total Bridegrooms.	Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.	Not stated.
Ages of Bridegrooms.	Under 20 years..	1,297	13	955	323	5	..	1	..	..	..
	20 to 24 "	15,707	9	4,739	9,334	1,432	154	31	5	3	..
	25 to 29 "	15,937	4	1,734	7,975	5,141	866	173	30	14	..
	30 to 34 "	6,548	3	362	2,098	2,356	1,276	353	79	21	..
	35 to 39 "	3,326	..	102	624	918	836	600	174	72	..
	40 to 44 "	1,854	..	40	205	338	431	410	289	141	..
	45 to 49 "	1,126	1	14	67	130	179	275	233	227	..
	50 to 54 "	596	..	8	30	27	54	125	131	221	..
	55 to 59 "	437	..	1	7	21	26	75	83	224	..
	60 to 64 "	314	..	1	6	8	11	33	33	222	..
	65 years and over	356	..	..	3	5	15	20	27	286	..
	Not stated ..	2	..	..	..	..	1	..	..	..	1
Total Brides ..		47,500	30	7,956	20,672	10,381	3,849	2,096	1,084	1,431	1

(iii) *Average Ages, Bridegrooms and Brides.* The age at marriage of brides has declined slightly during recent years to an average of about 25 years. The figures for the five years are :—1925, 25.95 years; 1926, 25.84; 1927, 25.72; 1928, 25.67; and 1929, 25.62. For the five years 1907-11 the average age was 25.70 years, compared with 25.92 years for the five years 1912-16, 26.07 years for the five years 1917-21, and 25.76 years for the five years 1925-29. The average age of bridegrooms in 1925 was 29.44 years; in 1926, 29.32 years; in 1927, 29.19; in 1928, 29.18; and in 1929, 29.18. It follows, therefore, that brides are generally speaking three and one-half years younger than bridegrooms.

4. **Previous Conjugal Condition.**—The number of bachelors and spinsters, widowed and divorced persons, who were married during the year 1929 has already been given. The following table shows the conjugal condition of the contracting parties :—

PREVIOUS CONJUGAL CONDITION OF PERSONS MARRIED.—AUSTRALIA, 1929.

Conjugal Condition.		Total Bridegrooms.	Brides.		
			Spinsters.	Widows.	Divorced.
Bridegrooms	{ Bachelors ..	43,792	41,915	1,148	729
	{ Widowers ..	2,834	1,856	775	203
	{ Divorced ..	874	669	106	99
Total Brides ..		47,500	44,440	2,029	1,031

5. **Birthplaces of Persons Married.**—The following table shows the birthplaces of persons who were married in 1929. In "Australian Demography," Bulletin No. 47, the relative birthplaces of bridegrooms and brides will be found tabulated in full detail.

BIRTHPLACES OF PERSONS MARRIED.—AUSTRALIA, 1929.

Birthplaces.	Bridegrooms.	Brides.	Birthplaces.	Bridegrooms.	Brides.
AUSTRALASIA—			ASIA—		
New South Wales ..	14,914	16,009	British India and		
Victoria ..	11,147	11,549	Ceylon ..	76	29
Queensland ..	4,752	5,305	China ..	18	6
South Australia ..	3,283	3,363	Japan ..	3	..
Western Australia ..	2,040	2,420	Syria ..	29	23
Tasmania ..	2,111	2,261	Other Countries in		
Northern Territory ..	12	22	Asia ..	26	23
Federal Capital Territory ..	3	7	AFRICA—		
New Zealand ..	502	419	Union of South Africa	125	112
EUROPE—			Egypt ..	7	7
England and Wales ..	5,253	3,838	Other African Countries ..	7	5
Scotland ..	1,544	1,214	AMERICA—		
Ireland ..	496	315	Canada ..	59	19
Other British Possessions in Europe ..	58	25	United States ..	94	48
Austria ..	16	8	Other American Countries ..	23	4
Belgium ..	8	6	POLYNESIA—		
Czecho-Slovakia ..	7	4	Fiji ..	18	13
Denmark ..	46	15	New Caledonia ..	..	14
Finland ..	27	5	Other Polynesian Islands ..	11	11
France ..	24	21	At Sea ..		
Germany ..	122	57	Unspecified ..	6	6
Greece ..	99	56		4	6
Italy ..	204	112	Total ..		
Jugo-Slavia ..	28	11		47,500	47,500
Netherlands ..	16	5			
Norway ..	49	2			
Poland ..	28	28			
Russia ..	84	50			
Spain ..	11	5			
Sweden ..	50	5			
Switzerland ..	35	22			
Other Countries in Europe ..	25	15			

6. Occupations and Ages of Bridegrooms.—A tabulation has been made of the occupations and ages of all males married in Australia during 1929, an abridgment of which is given in the following table. The average ages of the persons falling under the twenty-eight subdivisions were determined, and it appears that, apart from the "Indefinite class," which consists chiefly of persons who have retired from business and who are living on income from investments, and who may be expected to have reached a comparatively high age before attaining a position of financial independence, the average age ranges from 27.14 years for those engaged in the manufacture of animal and vegetable substances, to 32.33 years in the class engaged in pastoral pursuits. On the experience of 1929 the average ages at marriage of bridegrooms in the larger classes of occupations were as follows:—Professional, 30.13 years; Domestic, 30.34 years; Commercial, 29.59 years; Transport, 28.60 years; Industrial, 28.43 years; and Primary Producer, 30.75 years.

OCCUPATIONS AND AGES OF BRIDEGROOMS.—AUSTRALIA, 1929.

Ages at Marriage.	Pro- fessional.		Domestic.		Commercial.							Transport and Communication.			
	Government, Defence, and Law.	Others.	Board and Lodging.	Others.	Property and Finance.	Art, Mechanic, and Textile Products.	Food and Drinks.	Animal and Veger- table Substances.	Fuel, Light and Metals.	Merchants and Dealers.	Others.	Railways.	Roads and Trans.	Sea and Rivers.	Others.
Under 20..	12	17	9	27	3	6	61	3	1	19	87	33	103	11	16
20 to 24 ..	283	490	126	171	133	123	652	41	34	252	1,374	485	1,088	207	181
25 " 29 ..	493	879	176	128	252	168	551	79	29	394	1,800	483	840	190	243
30 " 34 ..	224	314	78	45	120	66	159	33	12	146	772	181	327	131	94
35 " 39 ..	83	135	40	32	45	28	85	24	4	79	379	107	143	59	49
40 " 44 ..	40	99	35	24	30	21	50	6	4	52	176	65	74	41	19
45 " 49 ..	28	50	25	16	16	15	26	6	2	32	126	28	43	28	9
50 and over	52	73	27	18	89	18	42	8	2	56	185	53	80	37	13
Not stated	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	1,215	2,058	516	461	638	445	1,626	200	83	970	4,849	1,435	2,657	704	624
Average age— year 1929	30.25	30.05	31.53	29.01	31.42	30.22	27.90	30.76	28.42	30.96	29.55	29.33	27.51	31.06	28.80

Ages at Marriage.	Manufacturing.								Primary Producers.				Indefinite.
	Art and Mechanic Productions.	Textiles and Fibrous Materials.	Food and Drinks.	Animal and Vegetable Substances.	Metals and Minerals.	Fuel, Light, and Energy.	Building and Construction.	Others.	Agricultural.	Pastoral.	Mining and Quarrying.	Others.	
Under 20..	193	37	39	14	53	14	78	402	72	27	33	12	..
20 to 24 ..	1,222	296	378	153	406	218	1,005	4,054	1,479	366	276	114	9
25 " 29 ..	1,088	239	260	168	398	266	823	3,412	1,884	505	215	106	10
30 " 34 ..	399	92	94	50	127	88	350	1,277	943	289	78	41	18
35 " 39 ..	167	54	52	23	70	44	185	694	474	189	42	29	10
40 " 44 ..	76	21	23	5	52	15	120	352	282	117	31	14	10
45 " 49 ..	58	21	15	..	12	12	69	236	153	69	19	0	6
50 and over	70	36	21	7	87	6	119	332	238	105	38	6	76
Not stated	..	..	..	..	..	..	1	..	..	..	..	..	..
Total ..	3,188	796	832	360	1,155	663	2,840	10,759	5,505	1,667	732	331	136
Average age—													
year 1929	27.92	28.89	27.66	27.14	28.44	28.10	29.08	28.50	30.60	32.33	29.18	28.74	48.07

7. **Fertility of Marriages.**—The quotient obtained by division of the nuptial births registered, e.g., during the five years 1925 to 1929, by the number of marriages registered during the five years 1920 to 1924, i.e., the period antecedent by five years to the period of the births, has been called the "fertility of marriages." The quotient for this period is 2.84—in other words, the number of children to be expected from every marriage in Australia is about three. This method, while not absolutely accurate, generally furnishes results which agree fairly well with those found by more elaborate and careful investigation. For the following five-yearly periods the results were:—1921–25, 3.25; 1922–26, 3.14; 1923–27, 2.79; 1924–28, 2.81; and 1925–29, 2.84.

8. **Registration of Marriages.**—In all the States marriages may be celebrated either by ministers of religion whose names are registered for that purpose with the Registrar-General, or by certain civil officers—in most cases district registrars. Most of the marriages are celebrated by ministers of religion. The proportions so celebrated in 1929 were:—New South Wales, 93.17 per cent.; Victoria, 91.96 per cent.; Queensland, 96.04 per cent.; South Australia, 92.63 per cent.; Western Australia, 82.15 per cent.; and Tasmania, 93.34 per cent., the percentage for Australia being 92.40. The registered ministers in 1929 belong to more than forty different denominations, some of which, however, can hardly be regarded as having any valid existence. A number of these have been omitted from the tabulation and are bracketed under the heading "Other Christian." The figures for 1929 are shown in the following table:—

MARRIAGES IN EACH DENOMINATION.—AUSTRALIA, 1929.

Denomination.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.	
									No.	Per. Cent.
Church of England	8,060	3,694	1,872	911	1,250	692	4	18	16,501	34.74
Roman Catholic ..	4,058	2,309	1,379	459	547	241	4	15	9,012	18.98
Methodist ..	2,258	1,833	979	1,086	461	314	6	4	6,941	14.61
Presbyterian ..	2,584	2,375	1,005	185	256	130	..	6	6,541	13.77
Congregational ..	458	473	107	167	106	75	..	..	1,386	2.92
Baptist ..	342	619	157	218	43	70	..	..	1,449	3.05
Church of Christ	104	328	52	105	37	44	..	..	670	1.41
Lutheran ..	44	74	149	178	6	1	..	..	452	0.95
Greek Catholic ..	34	11	4	12	12	..	..	..	73	0.15
Unitarian ..	4	3	3	3	..	..	..	..	13	0.03
Salvation Army ..	94	57	22	88	21	10	..	..	292	0.62
Seventh-Day Adventist ..	34	18	14	10	10	3	..	..	89	0.19
Other Christian ..	78	50	180	22	5	17	1	..	353	0.74
Hebrew ..	49	51	2	1	12	1	..	..	116	0.24
Registrar's Office	1,334	1,040	244	274	601	114	5	..	3,612	7.60
Total ..	19,535	12,935	6,169	3,719	3,367	1,712	20	43	47,500	100.00

§ 3. Deaths.

1. **Deaths, 1929.**—The following table shows the number of deaths, male and female, registered in each State during the year 1929:—

DEATHS, 1929.

—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Australia.
Males ..	14,018	9,131	5,054	2,799	2,472	1,164	57	23	34,718
Females ..	10,564	7,586	3,255	2,240	1,458	1,012	8	16	26,139
Total ..	24,582	16,717	8,309	5,039	3,930	2,176	65	39	60,857

2. **Crude Death Rates, 1929.**—The crude death rates for 1929 are as follow :—

CRUDE DEATH RATES (a), 1929.

Sex.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Aus- tralia.
Males ..	11.17	10.40	10.32	9.35	11.08	10.97	20.09	4.87	10.65
Females ..	8.74	8.51	7.48	8.00	7.75	9.40	5.97	4.37	8.39
Total ..	9.98	9.45	8.98	8.70	9.55	10.18	15.56	4.65	9.55

(a) Number of deaths per 1,000 of annual mean population.

3. **Index of Mortality.**—(i) *General.* The death rates quoted above are crude rates, i.e., they simply show the number of deaths per thousand of mean population without taking the age constitution into consideration. Other conditions being equal, however, the death rate of a country will be lower if it contains a large percentage of young people (not infants). In order to obtain a comparison of the mortality of various countries on a uniform basis so far as sex and age constitution is concerned, the standard population compiled by the International Institute of Statistics, according to age distribution (eleven age-groups) of the population of nineteen European countries at their censuses nearest to the year 1900 is used in the computation of the "Index of Mortality" as distinguished from the crude death rate. Full details of the "Standard Population" will be found in Year Book No. 22, page 962.

(ii) *Comparison of Rates.* For the year 1929 on the basis of the crude rates there is a range of 1.48 per 1,000 persons between the lowest rate in South Australia (8.70) and the highest rate in Tasmania (10.18), whereas the standardized rates increase the range to 2.72 per 1,000, i.e., between 8.97 in South Australia and 11.69 in Western Australia. In its application to the figures for 1929 the process of adjustment altered the relative positions of all States with the exception of South Australia and New South Wales from those determined by the crude rates. The principal change was that Western Australia in fourth place dropped to the lowest position, while Tasmania rose to the fourth place. The index of mortality for each state for 1929 is shown in the following table :—

INDEX OF MORTALITY, 1929.

States.						Territories.		Aus- tralia.
N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern.	Federal Capital.	
11.14	9.78	10.21	8.97	11.69	10.98	14.78	5.37	10.39

4. **Crude Death Rates of Various Countries.**—The following table gives particulars of the crude death rates of various countries for the latest available years :—

DEATH RATES (a).—VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
South Australia ..	1929	8.7	Sweden ..	1928	12.0
New Zealand ..	1929	8.8	United States (b) ..	1928	12.0
Queensland ..	1929	9.0	Belgium ..	1928	13.2
Victoria ..	1929	9.5	England and Wales ..	1929	13.4
Western Australia ..	1929	9.6	Finland ..	1928	13.5
Australia ..	1929	9.6	Northern Ireland ..	1928	14.4
Netherlands ..	1928	9.6	Scotland ..	1929	14.5
New South Wales ..	1929	10.0	Irish Free State ..	1929	14.6
Tasmania ..	1929	10.2	Czecho-Slovakia ..	1928	15.1
Union of South Africa (Whites) ..	1928	10.2	Italy ..	1928	15.6
Norway ..	1928	10.6	France ..	1928	16.5
Denmark ..	1928	11.0	Poland ..	1928	16.7
Canada (including Quebec)	1929	11.6	Spain ..	1928	18.4
Germany ..	1928	11.6	Japan ..	1928	19.8
Great Britain and Northern Ireland ..	1928	11.9	Rumania ..	1928	20.2
Switzerland ..	1928	12.0	Soviet Republics ..	1927	22.9
			Egypt ..	1928	24.1
			Ceylon ..	1928	24.8

(a) Number of deaths per 1,000 of mean population.

(b) Registration area.

5. **Infantile Deaths and Death Rate.**—(i) *Australia, 1925 to 1929.* The universal experience that during the first few years of life the higher death rate of male infants tends to counteract the excess of male births is confirmed by the fact that out of 342,619 male infants born from 1925 to 1929, 20,216 (58.9 per 1,000) died during their first year of life, while of 323,591 female infants only 15,225 (47.0 per 1,000) died during the first year.

INFANTILE DEATHS AND DEATH RATES.—AUSTRALIA, 1925 TO 1929.

Year.	Registered deaths under one year.			-Rate of Infantile Mortality.(a)		
	Males.	Females.	Total.	Males.	Females.	Total.
1925 ..	4,089	3,162	7,251	58.80	47.73	53.40
1926 ..	4,149	3,041	7,190	60.64	46.97	53.99
1927 ..	4,102	3,181	7,283	59.55	49.08	54.47
1928 ..	4,003	3,098	7,101	57.89	47.72	52.96
1929 ..	3,873	2,743	6,616	58.13	43.64	51.10

(a) Number of deaths under 1 year per 1,000 live births registered.

(ii) *States, 1925 to 1929.* For the States and Territories the rates of infantile mortality during the last five years were as follow :—

INFANTILE MORTALITY RATES (a), 1925 TO 1929.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Australia.
1925 ..	54.95	56.98	45.21	46.09	56.57	55.19	30.77	106.38	53.40
1926 ..	57.61	55.68	50.65	44.33	49.27	47.61	68.49	53.33	53.99
1927 ..	54.94	56.05	54.45	53.43	45.86	52.97	102.94	142.85b	54.47
1928 ..	54.77	55.63	45.54	47.51	48.14	63.95	60.24	83.33b	52.96
1929 ..	56.44	47.23	46.03	40.88	56.13	53.16	18.87	19.61b	51.10

(a) Number of deaths under 1 year per 1,000 live births registered. (b) Based on deaths of infants born in the Federal Capital Territory.

The deaths of infants under one year of age during 1929 numbered 6,616, the mortality rate being 51.10, which is the lowest recorded in Australia. Among the States in 1929, South Australia had the lowest and New South Wales the highest rate.

(iii) *Districts.* The total number of births and of deaths of children under one year of age for 1929 are shown in Australian Demography Bulletin, No. 47, Tables 24 and 76, for each of the sixty-four districts for which the vital statistics have been tabulated.

(iv) *Various Countries and Cities.* Compared with other countries, the States of Australia occupy a very favourable position, being surpassed by New Zealand, Norway, Netherlands, and Switzerland only. Among cities, however, the best of the Australian cities, Adelaide, has the sixth place only, whereas New Zealand has three cities amongst the first five on the list presented on the next page. A study of the respective rates shows that a high birth rate is often, though not invariably, accompanied by a high infantile death rate.

INFANTILE MORTALITY RATES (a).—VARIOUS COUNTRIES.

Country	Year.	Rate of Infantile Mor- tality. (a)	Crude Birth Rate. (b)	Country.	Year.	Rate of Infantile Mor- tality. (a)	Crude Birth Rate. (b)
New Zealand ..	1929	34	19.0	England and			
South Australia ..	1929	41	18.4	Wales ..	1929	74	16.3
Queensland ..	1929	46	20.0	Northern Ireland	1928	78	20.1
Victoria ..	1929	47	19.0	Denmark ..	1928	81	19.6
Norway ..	1927	51	18.0	Belgium ..	1928	87	18.4
Australia ..	1929	51	20.3	Scotland ..	1929	87	19.0
Netherlands ..	1928	52	23.3	Germany ..	1928	89	18.6
Tasmania ..	1929	53	22.4	France ..	1928	91	18.2
Switzerland ..	1928	54	17.3	Canada (includ- ing Quebec) ..	1929	92	24.0
Western Australia	1929	56	22.0	Italy ..	1927	120	27.0
New South Wales	1929	57	21.4	Spain ..	1928	125	29.7
Sweden ..	1928	62	16.1	Japan ..	1928	138	34.4
United States (Re- gistration Area)	1928	68	19.7	Egypt ..	1928	151	42.2
Great Britain and Northern Ireland	1928	68	17.2	Czecho-Slovakia	1927	157	23.3
Irish Free State ..	1929	70	19.8	Ceylon ..	1928	177	40.0
Union of South Africa (Whites)	1928	71	25.8	Hungary ..	1928	177	26.1
				Rumania ..	1927	209	34.4

(a) Number of deaths under 1 year per 1,000 births registered. (b) Number of births per 1 000 of mean population.

INFANTILE MORTALITY RATES (a).—VARIOUS CITIES.

City.	Year.	Rate of Infantile Mortality. (a)	City.	Year.	Rate of Infantile Mortality. (a)
Oslo ..	1929	34	Hamburg ..	1929	77
Auckland ..	1929	34	Johannesburg ..	1929	78
Christchurch ..	1929	40	Birmingham ..	1928	79
Wellington ..	1929	41	London ..	1929	79
Amsterdam ..	1929	43	Edinburgh ..	1929	80
Adelaide ..	1929	44	Munich ..	1929	83
San Francisco ..	1928	46	Dresden ..	1929	85
Stockholm ..	1929	46	Sheffield ..	1929	87
Melbourne ..	1929	51	Berlin ..	1929	89
Brisbane ..	1929	55	Liverpool ..	1929	95
Copenhagen ..	1929	55	Dublin ..	1929	95
Hobart ..	1929	56	Aberdeen ..	1929	95
Sydney ..	1929	57	Manchester ..	1929	96
Cape Town ..	1928	60	Leeds ..	1929	96
Chicago ..	1929	61	Paris ..	1929	99
Perth ..	1929	64	Cologne ..	1929	100
New York City ..	1928	66	Buda Pest ..	1929	101
Washington ..	1928	66	Glasgow ..	1929	107
Los Angeles ..	1928	66	Belfast ..	1929	112
Philadelphia ..	1928	71	Leipzig ..	1929	115
Toronto ..	1928	72	Breslau ..	1929	119
Antwerp ..	1929	73	Montreal ..	1928	144
Newcastle, N.S.W.	1929	76	Madras ..	1929	254
Detroit ..	1928	77	Bombay ..	1929	299

(a) Number of deaths under 1 year per 1,000 births registered.

(v) *Causes of Deaths of Children under one Year.* The following table gives for twenty-six causes the ages of all children who died under one year of age. Particulars for males and females may be found in Bulletin No. 47 of "Australian Demography."

CAUSES OF DEATHS OF CHILDREN UNDER ONE YEAR.—AUSTRALIA, 1929.

Age at Death.	Measles.	Whooping Cough.	Diphtheria.	Erysipelas.	Meningococcal Meningitis.	Pulmonary Tuberculosis.	Tubercular Meningitis.	Tuberculosis, other forms.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.	Broncho-Pneumonia.
Under 1 week ..	1	..	..	1	..	..	..	..	4	1	32	1	37
1 week and under 2 weeks ..	1	1	..	3	..	..	..	1	4	1	6	5	16
2 weeks ..	3	7	..	8	..	..	..	..	..	1	3	4	19
3 ..	..	..	..	8	..	..	..	..	5	6	6	6	27
1 month ..	3	39	1	4	..	..	1	..	3	6	6	15	69
2 months ..	23	26	..	..	..	..	..	..	7	5	5	3	44
3 ..	1	19	1	..	..	..	..	..	3	2	1	6	40
4 ..	3	7	..	4	..	..	3	..	1	3	4	6	38
5 ..	2	23	3	4	..	..	1	..	..	3	3	6	35
6 ..	5	9	1	1	..	..	4	..	1	3	4	6	40
7 ..	1	14	3	1	..	1	6	..	1	6	1	6	35
8 ..	4	11	3	..	1	..	2	..	1	2	2	2	24
9 ..	4	13	3	..	..	..	3	..	3	3	4	4	25
10 ..	6	10	9	1	1	3	1	2	1	4	3	2	24
11 ..	7	12	9	..	1	1	5	1	..	6	3	3	27
Total under 1 year ..	37	207	38	25	9	5	28	12	29	50	76	78	500
Infantile Mortality (a) ..	0.29	1.60	0.29	0.19	0.07	0.04	0.22	0.09	0.22	0.39	0.59	0.60	3.86
Ex-nuptial deaths under 1 year included in above ..	6	15	4	1	1	..	..	..	3	7	8	5	47
Infantile Mortality (b) ..	0.99	2.47	0.66	0.16	0.16	..	..	..	0.49	1.15	1.31	0.82	7.72

Age at Death.	Pneumonia.	Pleurisy.	Other Diseases of Stomach.	Diarrhoea and Enteritis.	Hernia.	Intestinal Obstruction.	Malformation.	Congenital Debility, Icterus and Sclerema.	Premature Birth.	Injury at Birth.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other Causes.	Total.
Under 1 week ..	10	..	2	13	..	..	301	289	1,505	307	341	3	56	2,902
1 week and under 2 weeks ..	11	..	2	14	..	1	48	86	181	24	34	..	32	468
2 weeks ..	18	..	..	12	..	..	26	36	83	9	13	..	21	249
3 ..	14	..	2	9	..	..	29	23	54	2	8	..	23	211
1 month ..	36	1	4	54	..	3	76	45	43	6	6	1	60	486
2 months ..	25	..	6	64	1	3	27	39	22	..	1	..	24	305
3 ..	26	1	4	77	..	2	33	37	4	..	..	..	28	293
4 ..	19	2	3	73	..	5	18	13	6	..	1	1	29	243
5 ..	14	..	5	67	..	9	11	7	4	1	..	..	32	232
6 ..	27	1	1	63	..	12	16	7	1	..	1	1	23	228
7 ..	16	..	1	64	..	4	10	3	..	..	1	..	34	212
8 ..	20	1	3	61	..	6	11	4	1	1	..	..	28	193
9 ..	28	..	1	62	..	11	6	1	..	..	..	..	31	202
10 ..	23	..	1	56	..	1	2	4	..	..	1	..	34	189
11 ..	37	..	1	48	..	4	10	3	..	..	..	..	24	203
Total under 1 year ..	314	6	36	737	1	61	624	597	1,904	350	407	6	479	6,616
Infantile Mortality (a) ..	2.43	0.05	0.28	5.69	0.01	0.47	4.82	4.61	14.70	2.70	3.14	0.05	3.70	51.10
Ex-nuptial deaths under 1 year included in above ..	25	1	5	103	..	1	27	66	157	19	13	5	48	567
Infantile Mortality (b) ..	4.17	0.16	0.82	16.92	..	0.16	4.44	10.85	25.79	3.12	2.14	0.82	7.89	93.15

(a) Rate per 1,000 total births.

(b) Rate per 1,000 ex-nuptial births.

Pre-natal influences, such as malformation, congenital debility, and premature birth, together with injuries at birth, accounted for 3,475, or 52 per cent., of all deaths under one year; and of these 3,475 deaths, 2,402, or 69 per cent., occurred within a

week of birth. Among the survivors of the first week, diarrhoea and enteritis had the most fatal effects. These diseases were responsible for 737 deaths, representing 11 per cent. of all deaths under one year, or 5.69 per 1,000 births.

(vi) *Deaths of Ex-nuptial Children under one Year.* The deaths of ex-nuptial children were tabulated by this Bureau for the first time in 1925. The causes of death of these children in 1929 are shown as an addendum to the preceding table.

Pre-natal influences such as malformation, congenital debility, premature birth, and injuries at birth accounted for 269, or 47 per cent., and diarrhoea and enteritis for 103, or 11 per cent., of the total deaths.

6. *Deaths in Age-Groups, 1925 to 1929.*—A distribution into age-groups has been made of the 290,037 deaths which occurred in Australia from 1925 to 1929, and the results have been tabulated for each State. It is, however, sufficient to show here the results for Australia as a whole, which are as follow :—

DEATHS IN AGE GROUPS.—AUSTRALIA, 1925 TO 1929.

Age-Group.	Males.	Females.	Total.	Percentage on Total Males.	Percentage on Total Females.	Percentage on Total.
Under 1 year ..	20,216	15,225	35,441	12.31	12.10	12.22
1 year and under 5 ..	6,660	5,610	12,270	4.05	4.46	4.23
5 years and under 20 ..	7,866	5,856	13,722	4.79	4.66	4.73
20 years and under 40 ..	17,819	16,734	34,553	10.85	13.30	11.91
40 years and under 60 ..	35,796	24,054	59,850	21.79	19.12	20.64
60 years and under 65 ..	14,842	9,343	24,185	9.04	7.43	8.34
65 years and over ..	60,884	48,953	109,837	37.07	38.91	37.87
Age unspecified ..	159	20	179	0.10	0.02	0.06
Total ..	164,242	125,795	290,037	100.00	100.00	100.00

7. *Deaths at Single Ages and in Age-Groups, 1929.*—(i) *General.* The 60,857 deaths registered in Australia in the year 1929 will be found tabulated in groups of five years for each State and Territory, in Bulletin No. 47 "Australian Demography, 1929." The deaths during the first two years of life have been tabulated in shorter periods. A summary for Australia is given in the following table :—

DEATHS AT SINGLE AGES AND IN AGE-GROUPS.—AUSTRALIA, 1929.

Ages.	Males.	Fe-males.	Total.	Ages.	Males.	Fe-males.	Total.
Total under 1 month ..	2,277	1,553	3,830	Total 20-24 years ..	826	657	1,483
" 1 month and under 3 ..	468	323	791	" 25-29 ..	872	776	1,648
" 3 months and under 6 ..	437	331	768	" 30-34 ..	921	838	1,759
" 6 months and under 12 ..	691	536	1,227	" 35-39 ..	1,139	1,022	2,161
				" 40-44 ..	1,373	1,057	2,430
Total under 1 year ..	3,873	2,743	6,616	" 45-49 ..	1,656	1,179	2,835
				" 50-54 ..	1,919	1,293	3,212
1 year and under 2 ..	661	536	1,197	" 55-59 ..	2,393	1,544	3,937
2 years ..	309	261	570	" 60-64 ..	3,085	1,874	4,959
3 ..	225	204	429	" 65-69 ..	3,788	2,429	6,217
4 ..	168	131	299	" 70-74 ..	3,641	2,626	6,267
Total under 5 years ..	5,236	3,875	9,111	" 75-79 ..	2,827	2,201	5,028
				" 80-84 ..	1,860	1,763	3,623
Total 5-9 years ..	531	426	957	" 85-89 ..	1,077	1,190	2,267
" 10-14 ..	408	318	726	" 90-94 ..	359	465	824
" 15-19 ..	660	469	1,129	" 95-99 ..	100	121	221
				" 100 and over ..	13	13	26
				Age Unspecified ..	34	3	37
				Total All Ages ..	34,718	26,139	60,857

(ii) *Rates.* The death rate per 1,000 living at each age in each State for the three years 1920, 1921, and 1922, i.e., the Census year 1921, and the years immediately preceding and following may be found in Official Year Book No. 22, page 975.

8. *Deaths of Centenarians, 1929.*—Particulars concerning the twenty-six persons—thirteen males and thirteen females—who died in 1929 aged 100 years and upwards, are given in the following table. While the Registrars-General of the various States verify the figures as far as possible, absolute reliance cannot be placed on their accuracy, owing to the well-known tendency of very old people to overstate their ages. In connexion with this question it may be noted that while parish registers in the United Kingdom often date very far back, compulsory registration of births dates practically from 1874 only, the Act of 1836 having left many loopholes for those unwilling to register the births of their children.

DEATHS OF CENTENARIANS.—AUSTRALIA, 1929.

Age.	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birthplace.	Length of Residence in Australia.	Conjugal Condition.
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MALES.

112	Brisbane ..	Queensland	Hypostatic Pneumonia	Not stated	South Sea Islands ..	Unknown	Single
110	Walcha ..	N.S.W. ..	Senility	Labourer ..	England ..	98 years ..	Married
110	Brown's Well ..	Sth. Aust.	" ..	Not stated	India	50 years ..	Not stated
108	Bowen ..	Queensland	" ..	Farm Labourer	Pacific Islands	Unknown	Single
105	Maranoa ..	N.S.W. ..	Pneumonia	Pensioner	Ireland ..	68 years ..	Not stated
104	Tamarang South ..	N.S.W. ..	Senility	Labourer ..	N.S.W. ..	Native	Married
104	Brisbane ..	Queensland	Myocarditis	None ..	India ..	Unknown	Single
103	Cowra ..	N.S.W. ..	Senility	Not stated	N.S.W. ..	Native ..	Married
103	Green Ponds ..	Tasmania	" ..	Farmer ..	Ireland ..	70 years ..	"
101	Redfern ..	N.S.W. ..	" ..	Labourer ..	Scotland ..	Unknown	"
100	Turon ..	" ..	Myocarditis	Cabinet-maker	England ..	94 years ..	"
100	Malvern East ..	Victoria ..	Valvular Disease	Insurance Manager	Ireland ..	77 years ..	"
100	Northcote ..	" ..	Senility	Farmer ..	" ..	72 years ..	"

FEMALES.

104	Tarro ..	N.S.W. ..	Senility	" ..	Ireland ..	79 years ..	Married
104	Perth ..	W. Aust. ..	Pneumonia	" ..	Rumania ..	30 years ..	"
103	Burrowa ..	N.S.W. ..	Bronchitis	" ..	England ..	90 years ..	"
103	Brighton ..	Victoria ..	Myocarditis	" ..	Ireland ..	75 years ..	"
102	Carlton North ..	" ..	Cardiac Dilatation	" ..	England ..	81 years ..	"
102	Northcote ..	" ..	Senility	" ..	Ireland ..	78 years ..	Single
101	Goulburn ..	N.S.W. ..	" ..	" ..	" ..	80 years ..	Married
101	Kempsey ..	" ..	" ..	" ..	" ..	85 years ..	"
101	Eylstone ..	" ..	" ..	" ..	England ..	72 years ..	"
101	Portland ..	Victoria ..	" ..	" ..	Ireland ..	87 years ..	"
101	Brisbane ..	Queensland	Myocarditis	" ..	England ..	66 years ..	"
100	Yarrowonga ..	Victoria ..	Arterio-Sclerosis	" ..	Ireland ..	66 years ..	Single
100	Kew ..	" ..	Senility	" ..	" ..	80 years ..	"

NOTE.—The particulars shown in this table are those given in the death certificates, and no attempt has been made by the Commonwealth Bureau of Census and Statistics to verify them.

9. *Length of Residence in Australia of Persons who Died in 1929.*—The length of residence in Australia of all persons whose deaths were registered in the year 1929 is shown in the following table:—

LENGTH OF RESIDENCE IN AUSTRALIA OF PERSONS WHO DIED IN 1929.

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in Australia ..	22,866	18,598	41,464	Resident 25 to 29 years ..	263	103	371
Resident under 1 year ..	97	33	130	" 30 to 34 ..	451	173	624
" 1 year ..	75	38	113	" 35 to 39 ..	441	254	695
" 2 years ..	100	67	167	" 40 to 44 ..	1,427	730	2,157
" 3 ..	88	67	155	" 45 to 49 ..	1,239	746	1,985
" 4 ..	87	50	137	" 50 to 54 ..	1,157	657	1,814
" 5 ..	91	59	150	" 55 to 59 ..	497	335	832
" 6 ..	91	44	135	" 60 to 64 ..	535	587	1,122
" 7 ..	69	57	126	" 65 yrs. and over ..	1,697	1,977	2,674
" 8 ..	74	57	131	Length of residence not stated ..	1,859	564	2,423
" 9 ..	52	65	117				
" 10 to 14 years ..	193	137	330				
" 15 to 19 ..	791	585	1,376				
" 20 to 24 ..	428	151	579				
				Total ..	34,718	26,139	60,857

10. Birthplaces of Persons who Died in 1929.—The following table gives the birthplaces of persons whose deaths were registered in 1929. More detailed information will be found in "Australian Demography," Bulletin No. 47.

BIRTHPLACES OF PERSONS WHO DIED IN 1929.—AUSTRALIA.

Birthplace.	Males.	Females.	Persons.	Birthplace.	Males.	Females.	Persons.
AUSTRALASIA—				ASIA—			
New South Wales ..	9,003	7,391	16,394	British India and Ceylon ..	103	33	136
Victoria ..	7,122	5,663	12,785	China ..	242	..	242
Queensland ..	2,356	1,834	4,190	Japan ..	35	..	35
South Australia ..	2,274	1,862	4,136	Philippine Islands ..	9	..	9
Western Australia ..	817	650	1,467	Syria ..	24	11	35
Tasmania ..	1,284	1,191	2,475	Other Asiatic Countries ..	31	8	39
Northern Territory ..	3	5	8				
Federal Capital Territory ..	7	2	9	AFRICA—			
New Zealand ..	301	187	488	Mauritius ..	7	3	10
EUROPE—				Union of Sth. Africa ..	39	16	55
England and Wales ..	5,560	3,784	9,344	Egypt ..	3	1	4
Scotland ..	1,450	1,013	2,463	Other African Countries ..	2	..	2
Ireland ..	1,798	1,699	3,497				
Other Brit. Possessions in Europe ..	50	17	67	AMERICA—			
Austria ..	10	3	13	Canada ..	42	16	58
Belgium ..	3	2	5	Other British Possessions in America ..	13	2	15
Czecho-Slovakia ..	1	..	1	United States of America ..	91	36	127
Denmark ..	128	43	171	Other American Countries ..	25	8	33
Finland ..	33	3	36				
France ..	54	29	83	POLYNESIA—			
Germany ..	410	270	680	Fiji ..	2	1	3
Greece ..	46	6	52	New Caledonia ..	3	2	5
Italy ..	141	23	164	New Hebrides ..	1	..	1
Jugo-Slavia ..	22	5	27	Other Polynesian Islands ..	51	7	58
Netherlands ..	23	7	30	At Sea ..	72	62	134
Norway ..	66	8	74	Unspecified ..	694	163	857
Poland ..	42	19	61				
Russia ..	37	22	59				
Spain ..	15	4	19				
Sweden ..	116	5	121				
Switzerland ..	36	16	52				
Other European Countries ..	21	7	28				
				Total Deaths ..	34,718	26,139	60,857

11. Occupations of Males who Died in 1929.—Information as to the main groups of the occupations of the 34,718 males who died in Australia in 1929 is contained in the following table :—

OCCUPATIONS OF MALES WHO DIED IN 1929.—AUSTRALIA.

Occupations.	No. of Deaths.	Occupations.	No. of Deaths.
CLASS I.—PROFESSIONAL.		CLASS V.—INDUSTRIAL.	
Government, Defence, Law ..	661	Art and Mechanic productions ..	1,200
Others	1,010	Textiles and fibrous materials ..	524
Total Class I. .. .	1,671	Food and drinks ..	342
Per cent. of Total Male Deaths	4.81	Animal and vegetable substances ..	120
CLASS II.—DOMESTIC.		Metals and minerals ..	666
Board and lodging ..	492	Fuel, light and energy ..	153
Others	414	Building and construction ..	1,588
Total Class II. .. .	906	Others	6,237
Per cent. of Total Male Deaths	2.61	Total Class V. .. .	10,830
CLASS III.—COMMERCIAL.		Per cent. of Total Male Deaths	31.20
Property and finance ..	360	CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Art, mechanic and textile products	254	Agricultural	3,838
Food and drinks ..	622	Pastoral	1,297
Animal and vegetable substances	130	Mining and quarrying ..	1,163
Fuel, light and metals ..	58	Others	267
Merchants and dealers ..	735	Total Class VI. .. .	6,565
Others	1,522	Per cent. of Total Male Deaths	18.91
Total Class III. .. .	3,681	CLASS VII.—INDEFINITE.	
Per cent. of Total Male Deaths	10.60	Independent means ..	790
CLASS IV.—TRANSPORT AND COMMUNICATION.		Occupation unspecified ..	1,242
Railway traffic ..	786	Total Class VII. .. .	2,032
Road and tramway traffic ..	777	Per cent. of Total Male Deaths	5.85
Sea and River traffic ..	593	CLASS VIII.—DEPENDENTS	
Others	223	Per cent. of Total Male Deaths	19.17
Total Class IV. .. .	2,379	Total Male Deaths ..	34,718
Per cent. of Total Male Deaths	6.85		

12. *Causes of Death.*—(i) *General.* The classification adopted by the Commonwealth Bureau of Census and Statistics is that of the International Institute of Statistics, as amended by the Committees of Revision which met in Paris in 1909 and 1920. The Committee of Revision met again in October, 1929. It is hoped to use the revised classification in the Vital Statistics for 1931.

(ii) *Mortality Statistics for 1907 and Subsequent Years.* The statistics relating to causes of death in Australia from the year 1907 onward have been tabulated in the Commonwealth Bureau of Census and Statistics in accordance with the above-mentioned classification, and the system is being employed also in the various State statistical offices.

(iii) *Classification of Causes of Death, 1925 to 1929, according to Abridged International Classification.* An abridged classification, which enumerates thirty-eight diseases and groups of diseases according to the revised classification, is in use in many European countries and American States, and a table has been prepared showing the causes of death according to the abridged classification, so that the results may be compared with those of countries which use the abridged index.

The compilations for the years 1925 to 1929 will be found in full in *Bulletins Nos. 43 to 47 of "Australian Demography."* In the following tables showing deaths of males, females, and persons for the year 1929 the abridged classification has been employed.

CAUSES OF DEATH.—MALES, 1929.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Aus- tralia.
1 Typhoid Fever ..	25	13	10	3	7	9	..	..	67
2 Typhus Fever ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	2	1	9	..	1	..	..	..	13
4 Small-pox ..	..	..	..	..	..	..	..	..	..
5 Measles ..	38	24	2	2	10	..	..	..	76
6 Scarlet Fever ..	30	4	1	..	1	..	..	..	36
7 Whooping Cough ..	90	30	10	..	10	6	..	..	146
8 Diphtheria ..	102	54	41	6	19	12	..	2	236
9a Influenza—Pneumonic	192	40	82	11	13	6	..	3	347
9b Influenza—other ..	96	21	61	7	5	11	..	..	201
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	..	..	..	..	..	..	..	..	..
12 Other Epidemic Diseases	88	52	21	9	11	1	2	..	184
13 Tuberculosis of the Respiratory System ..	688	530	216	160	182	41	1	..	1,818
14 Tuberculosis of the Men- inges ..	39	30	4	7	8	4	..	..	92
15 Other forms of Tubercu- losis ..	46	50	18	14	12	8	..	..	148
16 Cancer and other Malignant Tumours ..	1,228	932	463	351	221	97	5	..	3,297
17 Meningitis ..	61	36	24	8	10	12	..	1	152
18 Hæmorrhage, Embolism, and Softening of Brain	746	478	191	165	79	63	1	2	1,725
19 Diseases of the Heart	2,274	1,415	702	361	287	168	1	3	5,211
20 Acute Bronchitis ..	85	29	27	13	3	4	..	..	161
21 Chronic Bronchitis ..	167	109	67	48	26	15	..	..	432
22 Pneumonia ..	809	482	209	128	113	87	1	1	1,830
23 Other Diseases of the Respiratory System (Tuberculosis exceptd.)	652	531	249	120	145	52	2	1	1,752
24 Diseases of the Stomach (Cancer excepted) ..	117	90	53	25	13	11	..	..	309
25a Diarrhœa and Enteritis (children under 2 years of age) ..	285	107	82	22	88	13	..	..	597
25b Diarrhœa and Enteritis (2 years and over) ..	75	39	49	21	17	2	..	..	203
26 Appendicitis & Typhlitis	139	89	54	20	17	4	..	..	323
27 Hernia, Intestinal Ob- struction ..	111	98	51	28	23	12	1	..	324
28 Cirrhosis of the Liver	75	61	32	20	22	1	1	..	212
29 Acute and Chronic Nephritis ..	767	527	289	152	121	42	3	..	1,901
30 Non-cancerous Tumours and other Diseases of Female Genital Organs	..	..	..	..	..	..	..	..	..
31 Puerperal Septicæmia (Puerperal Fever) ..	..	..	..	..	..	..	..	..	..
32 Other Puerperal Acci- dents of Pregnancy and Confinement ..	..	..	..	..	..	..	..	..	..
33 Congenital Debility and Malformation ..	899	560	278	151	140	83	..	1	2,112
34 Senility ..	603	483	364	184	155	96	12	..	1,897
35a Homicide ..	28	22	6	3	3	3	..	..	65
35b Other Accidental Deaths	1,146	664	415	215	238	96	10	3	2,787
36 Suicide ..	239	153	109	58	69	12	4	..	644
37 Other Diseases ..	2,003	1,288	822	380	344	181	9	6	5,033
38 Unspecified or Ill-defined Diseases ..	73	89	43	107	59	12	4	..	387
Total—Males ..	14,018	9,131	5,054	2,799	2,472	1,164	57	23	34,718

CAUSES OF DEATH.—FEMALES, 1929.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Aus- tralia.
1 Typhoid Fever ..	20	6	5	1	3	4	..	..	39
2 Typhus Fever ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	..	..	4	..	..	..	..	..	4
4 Small-pox ..	..	..	..	..	..	..	..	..	..
5 Measles ..	23	21	3	6	8	1	..	..	67
6 Scarlet Fever ..	48	10	1	..	4	2	..	..	65
7 Whooping Cough ..	122	49	11	1	8	8	..	..	199
8 Diphtheria ..	111	47	39	7	14	6	..	..	224
9a Influenza—Pneumonic ..	167	45	63	5	11	5	..	..	299
9b Influenza—other ..	76	28	45	5	8	9	..	1	172
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	..	..	..	..	..	..	..	..	..
12 Other Epidemic Diseases ..	73	49	28	14	11	3	..	..	178
13 Tuberculosis of the Respiratory System ..	467	348	110	141	63	54	..	1	1,184
14 Tuberculosis of the Meninges ..	27	40	5	10	5	6	..	..	93
15 Other forms of Tuberculosis ..	44	43	9	11	10	12	..	..	129
16 Cancer and other Malignant Tumours ..	1,101	958	347	284	159	108	1	1	2,959
17 Meningitis ..	54	21	19	5	5	8	..	..	112
18 Hæmorrhage, Embolism, and Softening of Brain ..	666	638	173	185	91	70	..	3	1,826
19 Diseases of the Heart ..	1,810	1,202	470	266	163	157	..	2	4,070
20 Acute Bronchitis ..	87	26	15	12	1	5	..	..	146
21 Chronic Bronchitis ..	169	89	51	41	25	14	..	..	389
22 Pneumonia ..	531	230	121	88	67	65	..	..	1,152
23 Other Diseases of the Respiratory System (Tuberculosis exceptd.) ..	566	362	132	128	64	33	1	1	1,287
24 Diseases of the Stomach (Cancer excepted) ..	58	41	17	13	8	6	..	..	143
25a Diarrhœa and Enteritis (children under 2 years of age) ..	185	52	34	11	69	14	..	1	366
25b Diarrhœa and Enteritis (2 years and over) ..	91	73	43	12	12	7	..	1	239
26 Appendicitis & Typhlitis ..	76	36	19	16	8	3	..	..	158
27 Hernia, Intestinal Obstruction ..	108	75	28	25	14	9	..	..	259
28 Cirrhosis of the Liver ..	36	30	11	6	3	3	..	..	89
29 Acute and Chronic Nephritis ..	596	459	209	123	85	25	..	3	1,505
30 Non-cancerous Tumours and other Diseases of Female Genital Organs ..	102	51	29	16	13	7	..	..	218
31 Puerperal Septicæmia (Puerperal Fever) ..	102	71	16	16	10	7	..	..	222
32 Other Puerperal Accidents of Pregnancy and Confinement ..	172	112	71	36	35	9	1	..	436
33 Congenital Debility and Malformation ..	638	353	194	97	89	55	..	..	1,426
34 Senility ..	444	562	222	210	88	108	1	..	1,635
35a Homicide ..	15	11	12	8	1	6	..	..	53
35b Other Accidental Deaths ..	300	183	128	54	55	37	..	..	757
36 Suicide ..	63	27	20	14	10	7	..	..	141
37 Other Diseases ..	1,394	1,134	533	333	219	133	1	2	3,749
38 Unspecified or Ill-defined Diseases ..	17	54	15	35	19	6	3	..	149
Total—Females ..	10,564	7,586	3,255	2,240	1,458	1,012	8	16	26,139

CAUSES OF DEATH.—PERSONS, 1929.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
1 Typhoid Fever ..	45	19	15	4	10	13	..	..	106
2 Typhus Fever ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	2	1	13	..	1	..	..	..	17
4 Small-pox ..	..	..	..	..	..	..	..	..	..
5 Measles ..	66	45	5	8	18	1	..	..	143
6 Scarlet Fever ..	78	14	2	..	5	2	..	..	101
7 Whooping Cough ..	212	79	21	1	18	14	..	..	345
8 Diphtheria ..	213	101	80	13	33	18	..	2	460
9a Influenza—Pneumonic	359	85	148	16	24	11	..	3	646
9b Influenza—other ..	172	49	106	12	13	20	..	1	373
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	..	..	..	..	..	..	..	..	..
12 Other Epidemic Diseases	161	101	49	23	22	4	2	..	362
13 Tuberculosis of the Respiratory System	1,155	878	326	301	245	95	1	1	3,002
14 Tuberculosis of the Meninges ..	66	70	9	17	13	10	..	..	185
15 Other forms of Tuberculosis ..	90	93	27	25	22	20	..	..	277
16 Cancer and other Malignant Tumours ..	2,329	1,890	810	635	380	205	6	1	6,256
17 Meningitis ..	115	57	43	13	15	20	..	1	264
18 Hæmorrhage, Embolism, and Softening of Brain	1,412	1,116	364	350	170	133	1	5	3,551
19 Diseases of the Heart	4,084	2,617	1,172	627	450	325	1	5	9,281
20 Acute Bronchitis ..	172	55	42	25	4	9	..	..	307
21 Chronic Bronchitis ..	336	198	118	89	51	29	..	..	821
22 Pneumonia ..	1,340	762	330	216	180	152	1	1	2,982
23 Other Diseases of the Respiratory System (Tuberculosis exceptd.)	1,218	893	381	248	209	85	3	2	3,039
24 Diseases of the Stomach (Cancer excepted) ..	175	131	70	38	21	17	..	..	452
25a Diarrhœa and Enteritis (children under 2 years of age) ..	470	159	116	33	157	27	..	1	963
25b Diarrhœa and Enteritis (2 years and over) ..	166	112	92	33	29	9	..	1	442
26 Appendicitis & Typhlitis	215	125	73	36	25	7	..	..	481
27 Hernia, Intestinal Obstruction ..	219	173	79	53	37	21	1	..	583
28 Cirrhosis of the Liver	111	91	43	26	25	4	1	..	301
29 Acute and Chronic Nephritis ..	1,363	986	498	280	206	67	3	3	3,406
30 Non-cancerous Tumours and other Diseases of Female Genital Organs	102	51	29	16	13	7	..	..	218
31 Puerperal Septicæmia (Puerperal Fever) ..	102	71	16	16	10	7	..	..	222
32 Other Puerperal Accidents of Pregnancy and Confinement ..	172	112	71	36	35	9	1	..	436
33 Congenital Debility and Malformation ..	1,537	913	472	248	229	138	..	1	3,538
34 Senility ..	1,047	1,045	586	394	243	204	13	..	3,532
35a Homicide ..	43	33	18	11	4	9	..	..	118
35b Other Accidental Deaths	1,446	847	543	269	293	133	10	3	3,544
36 Suicide ..	302	180	129	72	79	19	4	..	785
37 Other Diseases ..	3,397	2,422	1,355	713	563	314	10	8	8,782
38 Unspecified or Ill-defined Diseases ..	90	143	58	142	78	18	7	..	536
Total—Persons ..	24,582	16,717	8,309	5,039	3,930	2,176	65	39	60,857

The next table shows the total deaths in Australia during the last five years in accordance with the abridged classification alluded to previously.

CAUSES OF DEATH.—AUSTRALIA, 1925 TO 1929.

PERSONS.

Cause.	1925.	1926.	1927.	1928.	1929.
1 Typhoid Fever	170	183	161	169	106
2 Typhus Fever	3	2	2	5	
3 Malaria	35	25	29	15	17
4 Small-pox		1			
5 Measles	130	108	113	201	143
6 Scarlet Fever	55	81	159	131	101
7 Whooping Cough	463	340	377	237	345
8 Diphtheria	273	322	388	433	460
9a Influenza—Pneumonic	190	470	238	547	646
9b Influenza—other	161	285	189	252	373
10 Asiatic Cholera					
11 Cholera Nostras		2		1	
12 Other Epidemic Diseases	419	526	321	350	362
13 Tuberculosis of the Respiratory System	2,994	3,142	3,030	3,202	3,002
14 Tuberculosis of the Meninges	156	166	179	164	185
15 Other forms of Tuberculosis	274	237	232	277	277
16 Cancer and other Malignant Tumours	5,477	5,700	5,758	6,010	6,256
17 Meningitis	237	276	273	261	264
18 Hæmorrhage, Embolism, and Softening of the Brain	3,038	3,149	3,257	3,361	3,551
19 Diseases of the Heart	7,486	7,692	8,393	8,737	9,281
20 Acute Bronchitis	260	248	344	260	307
21 Chronic Bronchitis	741	766	790	753	821
22 Pneumonia	2,218	2,469	2,779	2,953	2,932
23 Other Diseases of the Respiratory System (Tuberculosis excepted)	2,522	2,534	2,767	2,762	3,039
24 Diseases of the Stomach (Cancer excepted)	475	529	534	495	452
25a Diarrhoea and Enteritis (children under two years only)	1,386	1,614	1,330	1,616	963
25b Diarrhoea and Enteritis (2 years and over)	442	549	513	519	442
26 Appendicitis and Typhlitis	438	476	483	470	481
27 Hernia, Intestinal Obstruction	564	578	517	539	583
28 Cirrhosis of the Liver	312	312	321	339	301
29 Acute and Chronic Nephritis	2,978	2,989	3,098	3,189	3,406
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	165	166	179	196	218
31 Puerperal Septicæmia (Puerperal Fever, Peritonitis)	236	218	288	275	222
32 Other Puerperal Accidents of Pregnancy and Confinement	530	488	504	527	436
33 Congenital Debility and Malformation	3,688	3,717	3,784	3,686	3,538
34 Senility	3,563	3,562	3,623	3,196	3,532
35 Violent Deaths—					
(a) Homicide	83	103	110	111	118
(b) Other Accidental Deaths	3,134	3,393	3,520	3,373	3,544
36 Suicide	700	711	740	777	785
37 Other Diseases	7,924	8,133	8,339	8,386	8,782
38 Unspecified or Ill-defined Diseases	643	690	570	603	536
Total	54,568	56,952	58,282	59,378	60,857

NOTE.—In consequence of changes made in the classification of the causes of death the figures given in the table above are not on identical lines throughout the period covered.

13. Deaths from Specific Causes.—The above table furnishes particulars for the last five years only, and comparisons will, therefore, generally be restricted to that period.

(i) *Typhoid Fever*. The number of deaths from typhoid fever declined from 170 in 1925 to 106 in 1929, the rate for the latter year being 2 per 100,000 living, and much lower than the average for the last five years. Of the 106 who died, 67 were males and 39 females.

(ii) *Typhus*. Deaths from typhus have been rare in Australia, and none was recorded in 1929. During 1928, 5 deaths were recorded from this cause, 3 of which occurred in Queensland and 2 in Western Australia. In 1927, 1 death occurred in South Australia and 1 in Western Australia. In 1926, 1 death occurred in Victoria and 1 in South Australia. In 1925 there were 2 deaths in Queensland and 1 in South Australia.

(iii) *Malaria*. Deaths from malarial diseases are mainly confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory; 13 out of the 17 deaths registered in 1929 occurred in Queensland, 2 in New South Wales, and 1 each in Victoria and Western Australia.

(iv) *Small-pox*. The number of deaths from small-pox in Australia is very small and during the five years under review only one death occurred from this cause.

(v) *Measles*. Of the deaths from measles the greatest number occurred during 1928, when 201 were registered, while the minimum was in 1926 with a total of 108 deaths. Of the 143 deaths during 1929, 76 were males and 67 females; of these 66 were registered in New South Wales, 45 in Victoria, 5 in Queensland, 8 in South Australia, 18 in Western Australia, and 1 in Tasmania.

(vi) *Scarlet Fever*. The number of deaths decreased during 1929, when there were 101 deaths, of which 36 were males and 65 females. Of these deaths 78 occurred in New South Wales.

(vii) *Whooping Cough*. During 1929 there was a heavy increase in deaths from whooping cough, the number 345 (146 males and 199 females) representing a death rate of 5 per 100,000 persons. The deaths in each State were as follow:—New South Wales 212, Victoria 79, Queensland 21, South Australia 1, Western Australia 18, and 14 in Tasmania.

(viii) *Diphtheria*. The number of deaths due to diphtheria was 460 in 1929. Of these deaths (representing a death rate of 7 per 100,000 persons) 236 were males and 224 females. The deaths in each State were as follow:—New South Wales 213, Victoria 101, Queensland 80, South Australia 13, Western Australia 33, and Tasmania 18, and 2 in the Federal Capital Territory.

(ix) *Influenza*. The deaths from influenza during 1929 were higher than in the previous four years. Of the 1,019 deaths during 1929 from this disease, 646 were ascribed to pneumonic influenza and 373 to ordinary influenza.

(x) *Asiatic Cholera*. No deaths from Asiatic cholera have been recorded in Australia.

(xi) *Cholera Nostras*. For the five years under review only 3 deaths have been due to this cause.

(xii) *Other Epidemic Diseases*. The deaths registered under this heading numbered 362 in 1929, including 87 from dysentery, erysipelas 95, lethargic encephalitis 64, acute poliomyelitis 61, meningococcal meningitis 36, mumps 7, leprosy 4, spirochetal haemorrhagic jaundice 1, and other epidemic diseases 7. During the period 1925-29 there were no deaths from plague.

(xiii) *Tuberculosis of the Respiratory System*. Of the various forms of tuberculosis prevalent in Australia, phthisis, or tuberculosis of the lungs, has attracted the most attention. The intimate relation, however, between tuberculosis of the lungs and of other parts of the respiratory system renders it desirable that all forms of tuberculosis of the respiratory system should be brought under one head for investigations concerning the age incidence and duration of this disease.

During 1929 there were 3,002 deaths from tuberculosis of the respiratory system, which compares favourably with the average of 3,092 for the preceding four years. The 3,002 deaths in 1929 represented a rate of 47 per 100,000 persons. Of these deaths, 1,818 were males and 1,184 females.

(xiv) *Tuberculosis of the Meninges*. The number of deaths ascribed to this cause in 1929 was 185, which is above the average number for the preceding four years.

(xv) *Other Forms of Tuberculosis*. The deaths in 1929 include the following:—Tuberculosis of the intestines and peritoneum, 69; tuberculosis of the spinal column, 40; tuberculosis of the joints, 16; tuberculosis of other organs, 53; acute disseminated tuberculosis, 70; and chronic disseminated tuberculosis, 29.

(xva) *All Forms of Tuberculosis*.—(a) *General*. The total number of deaths in 1929 was 3,464, viz., 2,058 males and 1,406 females.

(b) *Ages at Death.* The following table shows the ages of these 3,464 persons :—

TUBERCULAR DISEASES.—DEATHS IN AGE-GROUPS, AUSTRALIA, 1929.

Ages.	Male.	Female.	Total.	Ages.	Male.	Female.	Total.
Under 5 years ..	82	83	165	50 years and under 55	201	65	266
5 years and under 10	21	19	40	55 " " 60	147	69	216
10 " " 15	18	27	45	60 " " 65	151	37	188
15 " " 20	66	118	184	65 " " 70	110	30	140
20 " " 25	140	207	347	70 " " 75	65	24	89
25 " " 30	180	202	382	75 " " 80	19	7	26
30 " " 35	183	172	355	80 " over ..	6	5	11
35 " " 40	215	156	371				
40 " " 45	233	92	325				
45 " " 50	221	93	314	Total ..	2,058	1,406	3,464

(c) *Occupations at Death, Males.* A tabulation of occupations of the males who died from tubercular diseases in 1929 is given hereunder :—

OCCUPATIONS OF MALES WHO DIED FROM TUBERCULAR DISEASES—AUSTRALIA, 1929.

Occupations.	No. of Male Deaths.	Occupations.	No. of Male Deaths.
PROFESSIONAL CLASS—		INDUSTRIAL CLASS—	
Government, Defence, Law ..	53	Art and Mechanic Productions	115
Others	71	Textiles and Fibrous Materials	51
DOMESTIC CLASS—		Food and Drinks ..	19
Board and Lodging	38	Animal and Vegetable Substances	9
Others	26	Metals and Minerals ..	36
COMMERCIAL CLASS—		Fuel, Light and Energy	16
Property and Finance ..	25	Building and Construction ..	103
Art, Mechanic and Textile Products	12	Others	412
Food and Drinks	46	AGRICULTURAL, PASTORAL, MINING, ETC., CLASS—	
Animal and Vegetable Substances	7	Agricultural	114
Fuel, Light and Metal ..	3	Pastoral	38
Merchants and Dealers ..	42	Mining and Quarrying ..	138
Others	184	Others	10
TRANSPORT AND COMMUNICATION CLASS—		INDEPENDENT MEANS ..	41
Railway Traffic	55	DEPENDENTS	175
Road and Tramway Traffic ..	62	OCCUPATION NOT STATED ..	91
Sea and River Traffic ..	48	TOTAL MALE DEATHS ..	2,058
Others	18		

(d) *Length of Residence in Australia.* The length of residence in Australia of persons who died from tubercular diseases in 1929 is given in the next table.

LENGTH OF RESIDENCE IN AUSTRALIA OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1929.

Length of Residence in Australia.	Male.	Fem.	Total.	Length of Residence in Australia.	Male.	Fem.	Total.
Born in Australia ..	1,525	1,207	2,732	Resident 10 years & under 15	26	12	38
Resident under 1 year ..	12	3	15	" 15 " " 20	77	31	108
" 1 year	9	3	12	" 20 " over ..	224	62	286
" 2 years	7	7	14	Length of residence not stated	103	23	126
" 3 "	19	9	28				
" 4 "	7	11	18				
" 5 " and under 10	49	38	87	Total Deaths ..	2,058	1,406	3,464

(e) *Death Rates.* The preceding table and the table on page 727 show that among persons who have lived less than five years in Australia, 702 deaths occurred, and of these 87, or 12.4 per cent., were due to tubercular diseases.

In order to show the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are given in the following table, together with the proportion which deaths from tuberculosis bear to 10,000 deaths from all causes :—

TUBERCULOSIS (ALL FORMS).—DEATH RATES (a) AND PROPORTION OF TOTAL DEATHS, 1929.

State.	Death Rates (a) from Tuberculosis.			Proportion per 10,000 Deaths from all Causes.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	62	45	53	551	509	533
Victoria	69	48	59	668	568	623
Queensland	49	29	39	471	381	436
South Australia	60	58	59	647	723	681
Western Australia	91	41	68	817	535	712
Tasmania	50	67	58	455	711	574
Northern Territory	35	..	24	175	..	154
Federal Capital Territory .. ..	..	27	12	..	625	256
Australia	63	45	54	593	538	569

(a) Number of deaths from tuberculosis per 100,000 of mean population.

(f) *Death Rates, Various Countries.* The following comparative table for various countries shows that Australia occupies a very favourable position as regards the death rate from this disease.

TUBERCULOSIS.—DEATHS PER 100,000 PERSONS LIVING, VARIOUS COUNTRIES.

Country.	Year.	Respiratory System.	All Forms.	Country.	Year.	Respiratory System.	All Forms.
Queensland ..	1929	35	39	England and Wales ..	1928	76	93
New Zealand ..	1928	41	46	Scotland ..	1929	67	94
Union of South Africa (Whites)	1928	36	51	Great Britain and Northern Ireland ..	1928	75	95
New South Wales	1929	47	53	Belgium ..	1927	68	97
Australia ..	1929	47	54	Rumania ..	1926	(a)	99
Tasmania ..	1929	44	58	Sweden ..	1928	(a)	126
South Australia	1929	52	59	Irish Free State	1929	102	127
Victoria ..	1929	50	59	Italy ..	1927	99	134
Ceylon ..	1928	(a)	63	Switzerland ..	1928	101	135
Western Australia	1929	60	68	Greece ..	1924	120	138
Denmark ..	1927	61	78	Northern Ireland	1928	103	140
Canada (including Quebec) ..	1929	66	80	Spain ..	1927	123	153
United States (Registration Area)	1927	71	81	France ..	1926	140	164
Netherlands ..	1928	61	84	Norway ..	1926	127	164
Egypt ..	1927	66	85	Japan ..	1927	139	195
Germany ..	1928	(a)	88	Czecho-Slovakia	1927	174	195

(a) Not available.

(xvi) *Cancer and other Malignant Tumours.*—(a) *General.* The number of deaths from cancer has increased continuously to 6,256 in 1929. Of the deaths registered 3,297 were of males, viz., 1,228 in New South Wales, 932 in Victoria, 463 in Queensland, 351 in South Australia, 221 in Western Australia, 97 in Tasmania, 5 in the Northern Territory, while 2,959 were of females, viz., 1,101 in New South Wales, 958 in Victoria, 347 in Queensland, 284 in South Australia, 159 in Western Australia, and 108 in Tasmania, and 1 each in the Northern Territory and the Federal Capital Territory.

(b) *Type and Seat of Disease.* Tables showing the type and seat of disease, in conjunction with age, and with conjugal condition, of the persons dying from cancer in 1929 will be found in Bulletin No. 47 of "Australian Demography." A summary regarding type and seat of disease for the year 1929 is given hereunder:—

DEATHS FROM CANCER.—TYPE AND SEAT OF DISEASE, AUSTRALIA, 1929.

Type of Disease.	Males.	Females	Persons.	Seat of Disease.	Males.	Females	Persons.
Carcinoma ..	2,253	2,148	4,401	Stomach and liver ..	1,399	786	2,185
Cancer ..	402	341	743	Peritoneum, intestines and rectum	496	505	1,001
Malignant disease ..	189	194	383	Female genital organs ..	..	581	581
Sarcoma ..	211	123	334	Breast ..	..	532	532
Epithelioma ..	144	55	199	Buccal cavity ..	299	31	330
Malignant tumour	16	27	43	Skin ..	124	74	198
Rodent ulcer ..	50	26	76	Other organs ..	979	450	1,429
Scirrhus ..	3	23	26				
Neoplasm ..	16	14	30				
Hypernephroma ..	13	8	21				
Total Deaths ..	3,297	2,959	6,256	Total Deaths ..	3,297	2,959	6,256

(c) *Ages at Death.* The ages of the 6,256 persons who died from cancer in 1929 are given in the following table, which shows that while the ages below 35 are not immune from the disease, the great majority of deaths occurred at ages from 35 upwards, the maximum being found in the age-group 65 to 70:—

DEATHS FROM CANCER.—AGES, AUSTRALIA, 1929.

Ages.	Males.	Females	Total.	Ages.	Males.	Females	Total.
Under 15 years ..	29	23	52	60 years and under 65	495	371	866
15 years and under 20	11	3	14	65 " " 70	688	431	1,119
20 " " 25	14	13	27	70 " " 75	530	379	909
25 " " 30	25	19	44	75 " " 80	355	256	611
30 " " 35	33	44	77	80 " " 85	172	144	316
35 " " 40	56	98	154	85 years and over	67	92	159
40 " " 45	88	167	255	Unspecified ..	5	..	5
45 " " 50	157	246	403				
50 " " 55	209	308	517				
55 " " 60	363	365	728	Total Deaths ..	3,297	2,959	6,256

(d) *Occupations.* A tabulation in summarized form of occupations of the males who died from cancer in 1929 is given hereunder :—

OCCUPATION OF MALES WHO DIED FROM CANCER.—AUSTRALIA, 1929.

Occupation.	No. of Male Deaths.	Occupation.	No. of Male Deaths.
PROFESSIONAL CLASS—		INDUSTRIAL CLASS—	
Government, Defence, Law ..	64	Art and Mechanic Productions	142
Others	107	Textiles and Fibrous Materials	71
DOMESTIC CLASS—		Food and Drinks	45
Board and Lodging	43	Animal and Vegetable Substances	17
Others	40	Metals and Minerals	89
COMMERCIAL CLASS—		Fuel, Light and Energy ..	12
Property and Finance ..	37	Building and Construction ..	203
Art, Mechanic, and Textile Products	29	Others	694
Food and Drinks	76	AGRICULTURAL PASTORAL, MINING, ETC., CLASS—	
Animal and Vegetable Substances	11	Agricultural	492
Fuel, Light and Metals ..	10	Pastoral	181
Merchants and Dealers ..	83	Mining and Quarrying ..	106
Others	162	Others	26
TRANSPORT AND COMMUNICATION CLASS—		INDEPENDENT MEANS ..	104
Railway Traffic	109	DEPENDENT	60
Road and Tramway Traffic ..	85	OCCUPATIONS UNSPECIFIED ..	119
Sea and River Traffic ..	59	TOTAL MALE DEATHS ..	3,297
Others	21		

(e) *Death Rates.* The following table shows the death rates and the proportion per 10,000 deaths from cancer in each State for the year 1929.

DEATHS FROM CANCER.—RATES(a) AND PROPORTIONS, 1929.

State or Territory.	Death Rates (a) from Cancer.			Proportion of 10,000 Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	98	91	95	876	1,042	947
Victoria	106	108	107	1,021	1,263	1,131
Queensland	94	80	87	916	1,066	975
South Australia	117	101	109	1,254	1,268	1,260
Western Australia	99	84	92	894	1,091	967
Tasmania	91	100	96	833	1,067	942
Northern Territory ..	176	75	144	877	1,250	923
Federal Capital Territory ..	..	27	12	..	625	256
Australia	101	95	98	950	1,132	1,028

(a) Number of deaths from cancer per 100,000 of mean population.

(f) *Comparison with Tuberculosis.* In recent years the death rate from tuberculosis has shown a tendency to decrease, while that from cancer has displayed an almost continuous increase. The table hereunder shows that for each of the years under review the death rate for cancer has been greater than that from tuberculosis, the excess varying from 34 per 100,000 persons in 1925 to 44 in 1929.

TUBERCULOSIS AND CANCER.—DEATH RATES(a) AUSTRALIA, 1925 TO 1929.

Year.	Death Rate (a) from Tuberculosis.			Death Rate (a) from Cancer.		
	Males.	Females.	Total.	Males.	Females.	Total.
1925	65	50	58	97	88	92
1926	67	50	59	97	92	94
1927	64	47	56	93	93	93
1928	65	50	58	97	94	96
1929	63	45	54	101	95	98

(a) Number of deaths per 100,000 of mean population.

(g) *Death Rates, Various Countries.* The following table shows the Australian death rate from cancer in comparison with that for other countries:—

CANCER.—DEATHS PER 100,000 PERSONS LIVING, VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Greece	1924	19	Irish Free State	1929	101
Egypt	1927	20	New Zealand	1929	104
Rumania	1926	30	Czecho-Slovakia	1927	109
Italy	1927	59	Northern Ireland	1928	117
Spain	1927	70	Norway	1926	119
Japan	1927	70	Netherlands	1928	120
Union of South Africa			Germany	1928	126
(Whites)	1928	78	Sweden	1925	130
France	1926	84	Switzerland	1928	137
Belgium	1927	87	Denmark	1927	140
Canada (including			Great Britain and		
Quebec)	1929	90	Northern Ireland	1928	142
United States (Regis-			England and Wales	1928	143
tration Area)	1927	96	Scotland	1929	146
Australia	1929	98			

(xvii) *Meningitis.* The deaths during 1929 from meningitis numbered 264, of which 115 occurred in New South Wales, 57 in Victoria, 43 in Queensland, 13 in South Australia, 15 in Western Australia, 20 in Tasmania, and 1 in Federal Capital Territory.

(xviii) *Cerebral Hæmorrhage, Embolism and Softening of the Brain.* The deaths under this heading have increased in number during the period under review. The figures for 1929 are made up as follows:—Cerebral hæmorrhage and apoplexy (including cerebral hæmorrhage, etc., associated with arterio-sclerosis), 1,447 males, 1,530 females; cerebral embolism, 36 males, 51 females; cerebral thrombosis, 199 males, 213 females; and softening of the brain, 43 males, 32 females.

(xix) *Diseases of the Heart.* The number of deaths in 1929 was 9,281, viz., 5,211 males and 4,070 females. Of the 9,281 deaths, 51 were attributed to pericarditis, 358 to acute endocarditis and myocarditis, 566 to angina pectoris, and 8,306 to other diseases of the heart. Of these deaths, New South Wales contributed 2,274 males and 1,810 females; Victoria, 1,415 males and 1,202 females; Queensland, 702 males and 470 females; South Australia, 361 males and 266 females; Western Australia, 287 males and 163 females; Tasmania, 168 males and 157 females; Northern Territory, 1 male and Federal Capital Territory, 3 males and 2 females. The death rates and proportions per 10,000 deaths in 1929 were as follow:—

DEATH RATES^(a) FROM DISEASES OF THE HEART AND PROPORTION OF 10,000 TOTAL DEATHS, AUSTRALIA, 1929.

State or Territory.	Death Rates (a) from Diseases of the Heart.			Proportion of 10,000 Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	181	150	166	1,622	1,713	1,661
Victoria	161	135	148	1,550	1,588	1,566
Queensland	143	108	127	1,389	1,444	1,410
South Australia	121	95	108	1,290	1,187	1,244
Western Australia	129	87	109	1,161	1,118	1,145
Tasmania	158	146	152	1,443	1,551	1,494
Northern Territory	35	..	24	175	..	154
Federal Capital Territory ..	64	55	60	1,304	1,250	1,282
Australia	160	131	146	1,501	1,557	1,525

(a) Number of deaths from diseases of the heart per 100,000 of mean population.

(xx) *Acute Bronchitis.* Deaths from bronchitis are classified under the following headings:—(a) Acute, (b) chronic, (c) unspecified, under five years of age, and (d) unspecified, five years and over. For the purpose of the abridged classification, (a) and (c) are treated as "acute," and (b) and (d) as "chronic" bronchitis. Acute bronchitis caused 260 deaths in 1925; 248 in 1926; 344 in 1927; 260 in 1928; and 307 in 1929, viz., 161 males and 146 females.

(xxi) *Chronic Bronchitis.* The deaths from this cause in 1929 numbered 821, viz., 432 males and 389 females, which was above the average for the previous four years.

(xxii) *Pneumonia.* The deaths from pneumonia during 1929 were 2,982—1,830 males and 1,152 females—which is 14 per cent. higher than the average, 2,605, for the previous four years.

(xxiii) *Other Diseases of the Respiratory System.* Deaths under this heading in 1925 numbered 2,522; in 1926, 2,534; in 1927, 2,767; in 1928, 2,762; and in 1929, 3,039. The total for 1929 is made up as follows, viz.:—Diseases of the nasal fossae, 35; diseases of the larynx, 35; broncho-pneumonia, 1,952; capillary bronchitis, 14; pleurisy, 219; pulmonary congestion and apoplexy, 311; gangrene of the lungs, 15; asthma, 158; pulmonary emphysema, 11; chronic interstitial pneumonia, 224; and other diseases of the respiratory system (tuberculosis excepted), 65.

(xxiv) *Diseases of the Stomach (Cancer excepted).* In 1929 this heading includes ulcer of the stomach, 143 males, 57 females; ulcer of the duodenum, 82 males, 17 females; and other diseases of the stomach (cancer excepted), 84 males, 69 females; a total of 452.

(xxva) *Diarrhœa and Enteritis (Children under two years only)*. The number of deaths due to these causes was 963 in 1929, the lowest number recorded for many years. During 1929, 6,616 children died before reaching their second birthday, and of these 963, or 14.5 per cent., died from diarrhœa and enteritis. The ages of children dying from these diseases during the first year of life will be found on page 724.

The number of deaths (under 2 years of age), the death rates, and proportions of 10,000 deaths due to diarrhœa and enteritis are given below :—

DEATHS, DEATH RATES^(a), ETC., DIARRHŒA AND ENTERITIS (UNDER 2 YEARS OF AGE).—AUSTRALIA, 1929.

State.	Number of Deaths from Diarrhœa and Enteritis. (Under 2 years of age.)			Death Rates (a) from Diarrhœa and Enteritis. (Under 2 years of age.)			Proportion of 10,000 Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	285	185	470	23	16	19	203	175	191
Victoria ..	107	52	159	12	6	9	117	69	95
Queensland ..	82	34	116	17	8	13	162	104	140
South Australia ..	22	11	33	7	4	6	79	49	66
Western Australia	88	69	157	39	37	38	356	473	400
Tasmania ..	13	14	27	12	13	13	112	138	124
Federal Capital Territory ..	..	1	1	..	27	12	..	625	256
Australia ..	597	366	963	18	12	15	172	140	158

(a) Number of deaths from these diseases per 100,000 of mean population.

(xxvb) *Diarrhœa and Enteritis (2 years and over)*. The number of deaths from the same causes in older ages, viz., 442, compared favourably with the average of 506 for the period 1925 to 1928.

(xxvi) *Appendicitis and Typhlitis*. Deaths under this heading numbered 438 in 1925, 476 in 1926, 483 in 1927, 470 in 1928, and 481 in 1929; the total for the last year included 323 males and 158 females.

(xxvii) *Hernia, Intestinal Obstruction*. The deaths under this heading have not varied greatly from year to year, the number registered in 1929 being 583, viz., hernia, 159, and intestinal obstruction, 424.

(xxviii) *Cirrhosis of the Liver*. The deaths from this cause during 1929 numbered 301, and include 31 deaths from alcoholic cirrhosis.

(xxix) *Acute and Chronic Nephritis*. The number of deaths attributable to these diseases shows a considerable increase on the number for previous years. In 1925 there were 2,978 deaths; in 1926, 2,989; in 1927, 3,098; in 1928, 3,189; and in 1929, 3,406, viz., 1,901 males and 1,505 females. Of the deaths registered in 1929, 178 were ascribed to acute nephritis, and 3,228 to chronic nephritis, of which 1,363 deaths occurred in New South Wales; 986 in Victoria; 498 in Queensland; 280 in South Australia; 206 in Western Australia; 67 in Tasmania; 3 in Northern Territory; and 3 in the Federal Capital Territory.

(xxx) *Non-Cancerous Tumours and other Diseases of the Female Genital Organs*. Deaths in 1925 numbered 165; in 1926, 166; in 1927, 179; in 1928, 196; and in 1929, 218. Included in the 218 deaths in 1929 were the following :—Cysts, etc., of the ovary, 45; salpingitis and pelvic abscess, 73; benign tumours of the uterus, 65; uterine hæmorrhage (non-puerperal), 7; and other diseases of the female genital organs, 28.

(xxxi) *Puerperal Septicæmia (Puerperal Fever)*. The 222 deaths from puerperal septicæmia during 1929 showed a decrease from the average of the previous four years, being 1.71 to every 1,000 live births. The corresponding rates during the preceding five years were:—1924, 1.96; 1925, 1.74; 1926, 1.64; 1927, 2.15; and 1928, 2.05. The following table shows the death rate per 1,000 live births from puerperal causes in various countries.

CHILDBIRTH.—DEATHS PER 1,000 LIVE BIRTHS, VARIOUS COUNTRIES.

Country.	Year.	Rates per 1,000 Live Births from—		
		Puerperal Sepsis.	Other Puerperal Causes.	All Puerperal Causes.
Sweden	1928	1.42	1.17	2.59
Italy	1927	0.93	1.77	2.70
Japan	1927	0.93	1.86	2.79
Norway	1926	0.83	2.18	3.01
Hungary	1927	1.59	1.45	3.04
Denmark	1927	1.04	2.01	3.05
Tasmania	1929	1.46	1.88	3.34
Netherlands	1928	0.93	2.44	3.37
Czecho-Slovakia	1927	1.97	1.60	3.57
Switzerland	1927	1.62	2.03	3.65
Egypt	1927	1.52	2.28	3.80
Spain	1927	2.23	1.63	3.86
England and Wales	1928	1.79	2.63	4.42
Queensland	1929	0.87	3.84	4.71
Great Britain and Northern Ireland	1928	1.86	2.91	4.77
New Zealand	1929	1.83	2.99	4.82
South Australia	1929	1.50	3.38	4.88
Irish Free State	1928	1.74	3.19	4.93
Western Australia	1929	1.10	3.87	4.97
Union of South Africa (Whites)	1928	2.28	2.70	4.98
France	1926	2.00	3.00	5.00
Australia	1929	1.71	3.37	5.08
New South Wales	1929	1.94	3.27	5.21
Northern Ireland	1928	1.50	3.74	5.24
Victoria	1929	2.11	3.33	5.44
Canada (including Quebec)	1929	1.96	3.73	5.69
Belgium	1927	3.08	2.63	5.71
United States (Registration Area)	1927	2.50	4.00	6.50
Germany	1926	2.54	4.06	6.60
Scotland	1929	2.38	4.49	6.87
Greece	1924	4.61	4.22	8.83
Ceylon	1927	6.48	11.02	17.50

(xxxiii) *Other Puerperal Accidents of Pregnancy and Confinement*. The deaths under this heading in 1925 numbered 530; 488 in 1926; 504 in 1927; 527 in 1928; and 436 in 1929. Included in the 436 deaths in 1929 were the following:—Accidents of pregnancy, 110; puerperal hæmorrhage, 93; other accidents of childbirth, 70; puerperal phlegmasia alba dolens, embolus, sudden death, 47; puerperal albuminuria and convulsions, 109; 5 deaths following childbirth; and 2 puerperal diseases of the breast.

(xxxiiib) *All Puerperal Causes*. The 658 deaths in 1929 under the two preceding headings correspond to a death rate of 21 per 100,000 females. It may be expressed in other terms by stating that 1 of every 195 women confined in 1929 died from puerperal causes. The corresponding ratios for married women were 1 of every 199, and for single women 1 of every 125. More detailed information will be found in a series of tables in Bulletin No. 47 "Australian Demography."

The ages of the mothers who died varied from 15 to 47 years as shown hereunder :—

DEATHS FROM PUERPERAL CAUSES.—AGES OF MOTHERS, AUSTRALIA, 1929.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women.	Total.
15 years ..	..	1	1	33 years ..	36	..	36
16 " ..	1	1	2	34 " ..	27	1	28
17 " ..	1	4	5	35 " ..	24	1	25
18 " ..	7	2	9	36 " ..	24	..	24
19 " ..	12	5	17	37 " ..	26	1	27
20 " ..	12	4	16	38 " ..	28	1	29
21 " ..	18	1	19	39 " ..	20	..	20
22 " ..	14	4	18	40 " ..	28	..	28
23 " ..	21	4	25	41 " ..	20	1	21
24 " ..	32	6	38	42 " ..	14	..	14
25 " ..	25	..	25	43 " ..	14	..	14
26 " ..	28	1	29	44 " ..	3	..	3
27 " ..	27	1	28	45 " ..	6	..	6
28 " ..	41	..	41	46 " ..	3	..	3
29 " ..	27	2	29	47 " ..	2	..	2
30 " ..	28	1	29				
31 " ..	15	2	17				
32 " ..	29	1	30	Total Deaths	613	45	658

The total number of children left by the married mothers was 1,824, an average of 2.8 children per mother.

Twenty-eight of the mothers who died had been married less than one year, 73 between one and two years, and 50 between two and three years. The duration of marriage ranged up to 30 years, apart from 6 cases in which the date of marriage was not stated. A tabulation, distinguishing the ages at marriage, will be found in Bulletin No. 47 "Australian Demography," which also includes a table, showing in combination the duration of marriage and previous issue.

(xxxiii) *Congenital Malformation, Debility, and Premature Birth.* The deaths under this heading in 1929 numbered 3,538, of which 3,475 were of children under one year of age. Of the deaths of children under one year of age 54 per cent. were due to those causes. The number of deaths for 1929 is given in the following table :—

DEATHS FROM CONGENITAL DEBILITY, ETC., AND MALFORMATION, 1929.

State or Territory.	Congenital Malformation.			Congenital Debility, Icterus, Sclerema.			Premature Birth, and Injury at Birth.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	156	112	268	153	89	242	590	437	1,027
Victoria ..	108	72	180	95	64	159	357	217	574
Queensland ..	66	39	105	36	36	72	176	119	295
South Australia	24	27	51	31	13	44	96	57	153
Western Australia	23	24	47	30	19	49	87	46	133
Tasmania ..	25	10	35	17	14	31	41	31	72
Northern Territory	..	..	..	..	..	..	..	..	..
Fed. Cap. Territory	1	..	1	..	..	..	..	..	..
Australia ..	403	284	687	362	235	597	1,347	907	2,254
Number of deaths under one year per 1,000 births	5.51	4.08	4.82	5.43	3.74	4.61	20.22	14.43	17.41

(xxxiv) *Senility.* In 1929, 3,532 deaths were attributed to this cause, as follows :—1,047 occurred in New South Wales, viz., 603 males and 444 females; 1,045 in Victoria, viz., 483 males and 562 females; 586 in Queensland, viz., 364 males and 222

females; 394 in South Australia, viz., 184 males and 210 females; 243 in Western Australia, viz., 155 males and 88 females; 204 in Tasmania, viz., 96 males and 108 females; and 12 males and 1 female in the Northern Territory.

Of the deaths described as due to senility, 8 males and 7 females were stated to be aged 100 years or over.

(xxxva) *Violent Deaths, Homicides.* Deaths from homicide in 1929 numbered 118, this figure being slightly higher than the average for the previous four years.

(xxxvb) *Other Accidental Deaths.* Deaths from accidents in 1929 numbered 3,544, compared with an average of 3,355 for the previous four years. Of the deaths in 1929, 1,446 occurred in New South Wales; 847 in Victoria; 543 in Queensland; 269 in South Australia; 293 in Western Australia; 133 in Tasmania; 10 in Northern Territory; and 3 in the Federal Capital Territory.

The following table shows the various kinds of violent deaths, including homicides, but excluding suicides, recorded in Australia for the year 1929:—

DEATHS FROM EXTERNAL VIOLENCE.—AUSTRALIA, 1929.

Cause of Death.	Males.	Females.	Persons.
Poisoning by food	15	12	27
Poisoning by venomous animals—			
(a) Snakebite	6	3	9
(b) Other	1	4	5
Other acute accidental poisonings (gas excepted) ..	47	29	76
Conflagration	15	6	21
Accidental burns (conflagration excepted) ..	136	133	269
Accidental mechanical suffocation	27	16	43
Accidental absorption of irrespirable or poisonous gas	12	11	23
Accidental drowning	407	86	493
Accidental injury by firearms	91	5	96
Accidental injury by cutting or piercing instruments	..	..	..
Accidental injury by fall	351	121	472
Accidental injury in mining or quarrying ..	45	..	45
Accidental injury by machinery	61	..	61
Accidental injury by other crushing—			
Railway accidents	134	10	144
Tramway accidents	46	15	61
Automobile accidents	808	190	998
Injuries by other vehicles	93	10	103
Aeroplane accidents	151	15	166
Other crushings	18	1	19
Injuries by animals (not poisoning)	25	5	30
Wounds of war	4	..	4
Starvation, thirst, fatigue	15	5	20
Excessive cold	3	..	3
Excessive heat	31	16	47
Lightning	5	2	7
Other accidental electric shocks	45	3	48
Homicide by firearms	29	19	48
Homicide by cutting or piercing instruments ..	8	12	20
Homicide by other means	22	21	43
Infanticide (murder of children under 1 year) ..	6	1	7
Fractures (cause not specified)	73	27	100
Other external violence (cause specified) ..	103	27	130
Other external violence (cause unspecified) ..	19	5	24
Total Deaths	2,852	810	3,662
Death Rate per 100,000 of mean population	88	26	57

(xxxvi) *Suicide.—(a) General.* Deaths by suicide in 1929 showed an increase on the figures for each of the previous four years, the number in 1925 being 700, viz., 569 males and 131 females; in 1926, 711, viz., 583 males and 128 females; in 1927, 740, viz., 598 males and 142 females; in 1928, 777, viz., 635 males and 142 females; and in 1929, 785, viz., 644 males and 141 females.

(b) *Modes Adopted.* The modes adopted by persons who committed suicide in the years 1925 to 1929 were as follow :—

SUICIDES, MODES ADOPTED.—AUSTRALIA, 1925 TO 1929.

Mode of Death.	Males.		Females.		Persons.	
	Total of 4 years, 1925-28.	1929.	Total of 4 years, 1925-28.	1929.	Total of 4 years, 1925-28.	1929.
Poisoning	544	152	233	62	777	214
Poisonous gas .. .	62	23	25	14	87	37
Hanging or Strangulation ..	358	93	93	18	451	111
Drowning .. .	171	41	74	18	245	59
Firearms .. .	711	203	28	7	739	210
Cutting or piercing instruments	417	98	50	9	467	107
Jumping from a high place ..	31	11	10	7	41	18
Crushing .. .	55	14	14	6	69	20
Other Modes .. .	36	9	16	..	52	9
Total .. .	2,385	644	543	141	2,928	785

(c) *Death Rates.* The death rates from suicide and the proportion per 10,000 of total deaths are given in the following table :—

SUICIDE.—DEATHS, DEATH RATES(a), AND PROPORTION OF TOTAL DEATHS, 1929.

State or Territory.	Number of Deaths.			Death Rates (a) from Suicide.			Proportion of 10,000 Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	239	63	302	19	5	12	171	60	123
Victoria ..	153	27	180	17	3	10	168	36	108
Queensland ..	109	20	129	22	5	14	216	61	155
South Australia ..	58	14	72	10	5	12	207	63	143
Western Australia	69	10	79	31	5	19	279	69	201
Tasmania ..	12	7	19	11	7	9	103	69	87
Northern Territory	4	..	4	141	..	96	702	..	615
Fed. Cap. Territory	..	..	..	..	..	..	..	..	..
Australia ..	644	141	785	20	5	12	186	54	129

(a) Number of deaths from suicide per 100,000 of mean population.

(d) *Ages.* From the following table, which shows the ages of the persons who committed suicide in 1929, it will be seen that both extreme youth and extreme old age are represented :—

AGES OF PERSONS WHO COMMITTED SUICIDE.—AUSTRALIA, 1929.

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
15 years and under 20	14	4	18	60 years and under 65	51	5	56
20 " " 25	34	9	43	65 " " 70	42	8	50
25 " " 30	57	17	74	70 " " 75	17	1	18
30 " " 35	64	14	78	75 " " 80	12	1	13
35 " " 40	71	21	92	80 " " 85	2	..	2
40 " " 45	76	22	98	85 " " 90	..	..	..
45 " " 50	64	19	83	Not stated	6	..	6
50 " " 55	78	13	91				
55 " " 60	56	7	63	Total Deaths ..	644	141	785

(e) *Occupations of Males.* The next table gives the occupations of the males who committed suicide in 1929 :—

OCCUPATIONS OF MALES WHO COMMITTED SUICIDE.—AUSTRALIA, 1929.

Occupation.	Deaths.	Occupation.	Deaths.
PROFESSIONAL CLASS—		INDUSTRIAL CLASS—	
Government, Defence, Law ..	12	Art and Mechanic Productions ..	19
Others	28	Textiles and Fibrous Materials ..	9
DOMESTIC CLASS—		Food and Drinks	9
Board and Lodging	19	Animal and Vegetable Sub-	
Others	12	stances .. .. .	..
COMMERCIAL CLASS—		Metals and Minerals	6
Property and Finance	4	Fuel, Light and Energy	1
Art, Mechanic and Textile		Building and Construction ..	30
Products	3	Others	158
Food and Drinks	18	AGRICULTURAL, PASTORAL,	
Animal and Vegetable Sub-		MINING, ETC., CLASS—	
stances	1	Agricultural	86
Fuel, Light, and Energy ..	1	Pastoral	34
Merchants and Dealers ..	25	Mining and Quarrying	19
Others	50	Others	4
TRANSPORT AND COMMUNICATION		INDEPENDENT MEANS	11
CLASS—		DEPENDENTS	5
Railways	14	OCCUPATION NOT STATED ..	32
Roads and Trams	15		
Sea and Rivers	13	Total	644
Others	6		

(f) *Death Rates, Various Countries.* The following comparative table for various countries shows that Australia occupies a very favourable position as regards the death rate from suicide.

SUICIDE.—DEATHS PER 100,000 PERSONS LIVING, VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Greece	1924	1.7	New South Wales ..	1929	12.3
Egypt	1927	3.2	Australia	1929	12.3
Irish Free State ..	1928	3.3	South Australia ..	1929	12.4
Spain	1927	4.2	England and Wales ..	1928	12.4
Northern Ireland ..	1928	5.1	Sweden	1928	13.1
Norway	1926	6.3	United States	1927	13.3
Netherlands	1928	6.8	Queensland	1929	13.9
Rumania	1926	7.8	Belgium	1927	15.5
Canada	1929	8.5	New Zealand	1929	15.7
Tasmania	1929	8.9	Denmark	1927	15.9
Scotland	1929	9.7	France	1926	19.0
Victoria	1929	10.2	Western Australia ..	1929	19.2
Italy	1927	10.4	Japan	1927	20.9
Union of South Africa (a)	1928	11.2	Switzerland	1928	25.4
Great Britain and Nor-			Czecho-Slovakia ..	1927	25.6
thern Ireland ..	1928	11.9	Germany	1928	26.0

(a). White population only.

(xxxvii) *Other Diseases.* The number of causes included under this heading is very large, amounting to no less than 90 of the items shown in the detailed classification, and deaths were recorded under each of these with the exception of the following five causes :—Glanders, rabies, soft chancre, chyluria, and amputation. The total number of deaths under "other diseases" in 1925 was 7,924, viz., 4,640 males and 3,284 females; in 1926, 8,133, viz., 4,643 males and 3,490 females; in 1927, 8,389, viz., 4,657 males and 3,732 females; in 1928, 8,386, viz., 4,740 males and 3,646 females; and in 1929

8,782, viz., 5,033 males and 3,749 females. Some of the diseases included here account for very considerable numbers of deaths. Particulars for 1929 are shown in the following table :—

DEATHS FROM "OTHER DISEASES."—AUSTRALIA, 1929.

Causes.	M	F.	Total.	Causes.	M.	F.	Total.
Anthrax	1	..	1	Other Diseases of the Nervous System	47	41	88
Tetanus	71	27	98	Diseases of the Eye	2	2	4
Mycoses	7	1	8	Diseases of the Ear	53	50	103
Syphilis	102	44	146	Aneurism	169	40	209
Gonococcus Infection ..	3	2	5	Arterio-sclerosis	637	328	965
Purulent Infection and Septicæmia	72	58	130	Other Diseases of the Arteries	69	20	89
Other Infectious Diseases ..	2	..	2	Embolism and Thrombosis (not cerebral)	119	73	192
Other Tumours (Tumours of the female genital organs excepted)	45	35	80	Diseases of the Veins	10	16	26
Acute Rheumatic Fever ..	123	109	232	Diseases of the Lymphatic System	8	6	14
Chronic Rheumatism and Gout	17	23	40	Hæmorrhage (without specified cause)	4	8	12
Rheumatoid and Osteoarthritis	42	76	118	Other Diseases of the Circulatory System .. ..	..	23	40
Gout	3	1	4	Diseases of the Mouth and its Associated Organs ..	23	13	36
Scurvy	1	..	1	Diseases of the Pharynx ..	38	56	94
Pellagra	1	..	1	Diseases of the Oesophagus ..	6	4	10
Beri-beri	10	..	10	Ankylostomiasis	4	2	6
Rickets	13	5	18	Intestinal Parasites	13	12	25
Diabetes	329	494	823	Other Diseases of the Intestines	36	30	66
Perniciou Anæmia	119	119	238	Acute Yellow Atrophy of the Liver	7	18	25
Other Anæmias and Chlorosis	32	28	60	Hydatid Tumours of the Liver	17	20	37
Diseases of the Pituitary Gland	5	5	10	Biliary Calculi	65	116	181
Exophthalmic Goitre	12	87	99	Other Diseases of the Liver ..	99	135	234
Other Diseases of the Thyroid Glands	19	48	67	Diseases of the Pancreas ..	32	38	71
Diseases of the Parathyroid Glands	1	..	1	Peritonitis (without specified cause)	49	62	111
Diseases of the Thymus Gland	13	9	22	Other Diseases of the Digestive system (Cancer and Tuberculosis excepted) ..	2	1	3
Addison's Disease	15	22	37	Other Diseases of the Kidneys and their Adnexa ..	151	151	302
Diseases of the Spleen .. ..	..	3	3	Calculi of Urinary Passages ..	34	28	62
Leucæmia	67	53	120	Diseases of the Bladder	91	30	121
Hodgkin's Disease	51	24	75	Other Diseases of the Urethra, Urinary Abscesses, etc. ..	35	2	37
Acute and Chronic Alcoholism	81	23	104	Diseases of the Prostate ..	394	..	394
Chronic Lead Poisoning ..	16	1	17	Non-venereal Diseases of the Male Genital Organs ..	5	..	5
Other Chronic Mineral Poisoning .. ..	..	1	1	Non-puerperal Diseases of the Breast .. ..	..	2	2
Chronic Organic Poisonings ..	1	1	2	Gangrene	55	30	85
Other General Diseases ..	58	59	117	Furuncle	23	17	40
Encephalitis—Cerebral Abscess	28	24	52	Phlegmon, Acute Abscess ..	77	55	132
Encephalitis—Other Diseases ..	61	46	107	Other Diseases of the Skin and Adnexa	25	30	55
Locomotor Ataxia	49	16	65	Non-tuberculous Diseases of the Bones	78	53	131
Other Diseases of the Spinal Cord	111	81	192	Other Diseases of the Joints (Tuberculosis and Rheumatism excepted)	12	8	20
Paralysis without specified cause	148	139	287	Other Diseases of the Organs of Locomotion	4	2	6
General Paralysis of the Insane	92	17	109	Diseases of the Umbilicus ..	13	8	21
Other Forms of Mental Alienation	49	52	101	Atelectasis	141	119	260
Epilepsy	130	82	212	Other Diseases peculiar to Infancy	63	63	126
Convulsions (non-puerperal) ..	4	4	8	Lack of Care (Infante) ..	6	..	6
Convulsions of Children under 5 years of age	53	45	98				
Chorea	1	8	9				
Neuralgia and Neuritis	11	11	22				
Idiocy, Imbecility	18	7	25				
Cerebral Tumour	110	77	187				
Disseminated Sclerosis	41	28	69				
Paralysis Agitans	61	42	103				
				Total Deaths	5,033	3,749	8,782

(xxxviii) *Unspecified or Ill-defined Diseases.* The number of deaths included under this heading was 648 in 1925, 690 in 1926, 570 in 1927, 603 in 1928, and 536 in 1929, of which 387 were males and 149 females. The detailed classification shows these ill-defined diseases under two headings—sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Heart failure, asthenia, anasarca, atrophy, exhaustion, dropsy, ascites, and general œdema, etc. In 1929, the number of deaths which came under the first of these categories was 51, and under the

second, 485. It is inevitable that cases will occur regarding which the available information is insufficient to permit of a clear definition of the fatal disease in the certificate of death. In the majority of cases, however, there is little doubt that more satisfactory certificates might have been given.

14. Causes of Deaths in Classes.—The figures in the preceding sub-sections relate to specific causes of death, and are of greater value in medical statistics than a mere grouping under general headings. The classification under fifteen general headings adopted by the compilers of the International Nomenclature is, however, shown in the following table, together with the death rates and proportions on total deaths pertaining to those classes:—

DEATHS, DEATH RATES(a), ETC., IN CLASSES.—AUSTRALIA, 1929.

Class.	Total Deaths.			Death Rates.(a)			Proportion of 10,000 Deaths.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1. Epidemic, Endemic, and Infectious Diseases	3,622	2,785	6,407	111	89	101	1,044	1,065	1,053
2. General diseases not included above	4,371	4,185	8,556	134	134	134	1,259	1,601	1,406
3. Diseases of the Nervous System and of the Organs of Sense	2,524	2,311	4,835	78	74	76	727	884	795
4. Diseases of the Circulatory System	6,666	4,983	11,649	205	160	183	1,920	1,906	1,914
5. Diseases of the Respiratory System	4,175	2,974	7,149	128	95	112	1,203	1,138	1,175
6. Diseases of the Digestive Organs	2,360	1,761	4,121	72	57	65	680	674	677
7. Diseases of the Genito-Urinary System and Adnexa	2,611	1,936	4,547	80	62	71	752	741	747
8. Puerperal Condition	..	658	658	..	21	10	..	252	108
9. Diseases of the Skin and of the Cellular Tissue	180	132	312	6	4	6	51	50	51
10. Diseases of the Bones and Organs of Locomotion	94	63	157	3	2	2	27	24	26
11. Malformations	403	284	687	12	9	11	116	109	113
12. Early Infancy	1,932	1,332	3,264	59	43	51	557	510	536
13. Old Age	1,897	1,635	3,532	58	53	55	546	625	580
14. External Causes	3,496	951	4,447	107	31	70	1,007	364	731
15. Ill-defined Diseases	387	149	536	12	5	8	111	57	88
Total ..	34,718	26,139	60,857	1,065	839	955	10,000	10,000	10,000

(a) Number of deaths per 100,000 of mean population.

15. Ages at Death of Married Males and Females, and Issue.—Bulletin No. 47 "Australian Demography" contains a number of tables showing the age at marriage, age at death, birthplaces, and occupations, in combination with the issue of married persons who died in Australia in 1929. A summary of those tables is given hereunder. Deaths of married males in 1929 numbered 19,754, and of married females, 17,600. The tabulations which follow deal, however, with only 19,245 males and 17,247 females, the information in the remaining 862 cases being incomplete. The total number of children in the families of the 19,245 males was 87,967, and of the 17,247 females, 83,558. The average number of children is shown for various age-groups in the following table:—

AGES AT DEATH OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.—AUSTRALIA, 1929.

Age at Death.	Average Family of Males.	Average Family of Females.	Age at Death.	Average Family of Males.	Average Family of Females.
Under 20 years	0.50	0.66	70 to 74 years	5.34	5.78
20 to 24 years	0.97	1.25	75 " 79 "	5.83	6.24
25 " 29 "	1.34	1.75	80 " 84 "	6.38	6.33
30 " 34 "	1.90	2.47	85 " 89 "	6.58	6.45
35 " 39 "	2.44	2.79	90 " 94 "	6.64	6.82
40 " 44 "	2.91	3.52	95 " 99 "	7.26	7.01
45 " 49 "	3.47	3.44	100 years and upwards	3.57	4.56
50 " 54 "	3.54	3.64	Age not stated	6.57	..
55 " 59 "	3.93	4.25			
60 " 64 "	4.13	4.61			
65 " 69 "	4.71	5.30	All ages	4.57	4.84

The figures in the preceding table include the issue both living and dead, the proportion between them, taking the issue of deceased males and females together, being about 1,000 to 264. The totals are shown in the following table :—

ISSUE OF MARRIED MALES AND FEMALES.—AUSTRALIA, 1929.

Issue of Married Males.				Issue of Married Females.			
	Males.	Females.	Total.		Males.	Females.	Total.
Living ..	35,702	35,437	71,139	Living ..	32,088	32,397	64,485
Dead ..	9,548	7,280	16,828	Dead ..	10,741	8,332	19,073
Total ..	45,250	42,717	87,967	Total ..	42,829	40,729	83,558

16. Ages at Marriage of Deceased Males and Females, and Issue.—While the table giving the average families of married males and females naturally shows an increase in the averages with advancing ages at death, the following table, which gives the average families of males and females according to the age at marriage of the deceased parents, shows a corresponding decrease in the averages as the age at marriage advances :—

AGES AT MARRIAGE OF DECEASED MALES AND FEMALES, AND AVERAGE ISSUE.—AUSTRALIA, 1929.

Males.			Females.		
Age at Marriage.	Average Family of Males.	Average Family of Females.	Age at Marriage.	Average Family of Males.	Average Family of Females.
Under 15 years ..	..	4.75	50 to 54 years ..	1.74	..
15 to 19 " ..	6.03	6.70	55 " 59 " ..	1.49	..
20 " 24 " ..	5.58	5.30	60 " 64 " ..	0.69	..
25 " 29 " ..	4.82	3.88	65 years and upwards ..	0.77	..
30 " 34 " ..	3.93	2.59	Age unspecified ..	4.59	4.35
35 " 39 " ..	3.26	1.37			
40 " 44 " ..	2.48	0.54			
45 " 49 " ..	1.83	0.01	All Ages ..	4.57	4.84

17. Birthplaces of Deceased Married Males and Females, and Issue.—The following table shows the birthplaces of married males and females who died in 1929, together with their average issue. No generalizations can, of course, be made in those cases in which the number of deaths was small, but where the figures are comparatively large, as in the case of natives of Australia, differences occur between the averages of the individual States, which appear inexplicable on any other ground than that of different age constitution of the locally born population of the various States due to the different dates of the foundation of settlement. Thus, New South Wales and Tasmania, owing to their early settlement, contain a larger number of locally-born inhabitants of advanced ages than Victoria and Queensland, in which colonization was begun almost fifty years after the foundation of New South Wales. It will be noted that the differences occur both in the male and female averages.

BIRTHPLACES OF DECEASED MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.—AUSTRALIA, 1929.

Birthplace.	Married Males.		Married Females.		Birthplace.	Married Males.		Married Females.	
	Deaths.	Average Family.	Deaths.	Average Family.		Deaths.	Average Family.	Deaths.	Average Family.
New South Wales ..	4,306	4.69	4,244	4.88	Switzerland ..	19	5.47	13	6.38
Victoria ..	3,882	4.12	3,503	4.22	Other European Countries ..	12	3.42	6	5.00
Queensland ..	787	4.18	829	4.16	British India and Ceylon ..	45	4.13	29	5.31
South Australia ..	1,391	4.47	1,283	4.79	China ..	60	3.25	..	..
Southern Australia ..	183	4.56	208	4.01	Japan ..	7	1.57	..	..
Tasmania ..	730	5.09	765	5.08	Philippine Islands ..	1	4.00	..	..
Northern Territory ..	..	..	3	4.33	Syria ..	16	3.75	9	3.89
Federal Capital Territory ..	4	3.25	..	..	Other Asiatic Countries ..	8	2.25	4	6.75
New Zealand ..	207	3.28	142	3.56	Mauritius ..	7	5.71	3	3.00
England and Wales ..	4,270	4.71	3,349	5.08	Union of South Africa ..	20	3.35	15	5.07
Scotland ..	1,079	4.49	878	5.31	Egypt ..	2	1.50	1	3.00
Ireland ..	1,182	5.44	1,406	5.64	Other African Countries ..	2	6.50	..	..
Other British Possessions in Europe ..	34	4.47	12	5.25	Canada ..	28	2.93	11	4.91
Austria ..	8	3.00	2	4.00	Other British Possessions in America ..	7	3.29	1	3.00
Belgium ..	2	6.50	2	1.00	United States ..	59	4.02	29	4.66
Czecho-Slovakia ..	1	5.00	..	..	Other American Countries ..	15	3.00	7	5.86
Denmark ..	97	4.75	37	6.41	New Caledonia ..	1	..	..	..
Finland ..	11	4.55	1	3.00	Other Polynesian Islands ..	9	5.22	6	3.00
France ..	34	4.50	23	2.48	At Sea ..	55	6.11	55	6.31
Germany ..	319	6.06	253	6.71	Unspecified ..	53	4.13	36	4.56
Greece ..	19	2.89	3	2.00					
Italy ..	75	3.73	18	4.44					
Jugo-Slavia ..	12	3.08	5	2.20					
Netherlands ..	12	4.75	6	5.17					
Norway ..	37	4.54	8	5.63					
Poland ..	29	4.03	17	5.29					
Russia ..	23	3.70	18	3.56					
Spain ..	11	4.18	3	4.00					
Sweden ..	74	3.36	4	5.00					
					Total ..	19,245	4.57	17,247	4.84

18. Occupations of Deceased Married Males, and Issue.—The following tabulation shows the average issue in combination with the occupation of deceased males.

OCCUPATIONS OF DECEASED MARRIED MALES AND AVERAGE ISSUE—AUSTRALIA, 1929.

Occupation.	Deaths of Married Males.	Average Family.	Occupation.	Deaths of Married Males.	Average Family.
PROFESSIONAL CLASS—			INDUSTRIAL CLASS—		
Government, Defence, and Law ..	562	4.09	Art and Mechanic Products ..	845	4.18
Others ..	718	3.60	Textiles and Fibrous Materials ..	397	4.17
DOMESTIC CLASS—			Food and Drinks ..	257	4.25
Board and Lodging ..	327	3.39	Animal and Vegetable Substances ..	93	4.61
Others ..	300	4.21	Metals and Minerals ..	530	4.55
COMMERCIAL CLASS—			Fuel, Light, and Energy ..	108	3.83
Property and Finance ..	306	3.50	Building and Construction ..	1,253	4.61
Art, Mechanic and Textile Products ..	213	4.05	Others ..	3,457	4.57
Food and Drinks ..	484	4.28	AGRICULTURAL, PASTORAL, MINING, ETC., CLASS—		
Animal and Vegetable Substances ..	106	4.76	Agricultural ..	2,897	5.72
Fuel, Light and Metals ..	50	4.20	Pastoral ..	831	5.07
Merchants and Dealers ..	568	4.03	Mining and Quarrying ..	775	5.00
Others ..	1,063	3.19	Others ..	163	4.97
TRANSPORT AND COMMUNICATION CLASS—			INDEPENDENT MEANS ..	536	4.93
Railways ..	655	4.79	DEPENDENTS ..	115	5.61
Roads and Trams ..	575	4.42	OCCUPATION NOT STATED ..	476	5.07
Sea and Rivers ..	381	3.85			
Others ..	154	4.00	Total ..	19,245	4.57

§ 4. Australian Life Tables.

Official Year Book, No. 20, pp. 962 and 969 to 973, contained a synopsis of the various Australian Life Tables, also comparisons with other countries of the expectation of life at various ages. Considerations of space, however, do not permit of their repetition herein.

§ 5. Registration of Births, Deaths and Marriages in the Territory for the Seat of Government.

Up to the end of 1929 the provisions of the Registration of Births, Deaths and Marriages Act of 1899 and the Marriage Act of 1899 of New South Wales applied to the Territory for the Seat of Government. Births, deaths and marriages occurring within the Territory were registered by the District Registrars, Queanbeyan and Nowra, and were incorporated in the New South Wales records.

Towards the end of 1929, however, the Registration of Births, Deaths and Marriages Ordinances were made, providing for the assumption by the Commonwealth Government of the function of registration within the Territory as from 1st January, 1930. The system has been successfully inaugurated and has functioned satisfactorily since that date. The Commonwealth Statistician is the Principal Registrar, and all registrations are made at Canberra.

Marriages within the Territory are celebrated according to the conditions prescribed by the Marriage Ordinance, 1929. This Ordinance, which closely follows the provisions of the Marriage Act of New South Wales, which it supersedes as regards the Territory for the Seat of Government, came into operation on 1st January, 1930.

§ 6. Graphical Representation of Vital Statistics.

(See Graphs pp. 705 to 710.)

1. **General.**—The progressive fluctuations of the number of births, marriages, and deaths are important indexes of the economic conditions and social ideals of a community. Graphs have accordingly been prepared which show these fluctuations. It should be remembered, however, that, normally, the increase of births and marriages should be proportional to the growth of population.

2. **Graphs of Annual Births, Marriages, and Deaths.**—The outstanding features of the graph representing births are:—An almost continuous rise in the numbers from 1860 to 1891; a decline till 1898, associated with the commercial crisis of 1891-93; a sharp fall in 1903 which accompanied a severe drought; an uninterrupted increase from 1903 to 1914, the total for 1914 being the highest recorded; a rapid decline until 1920, the result of war conditions. The figures for the last nine years show a tendency to greater stability, though with a general downward tendency.

The graph for marriages up to 1914 discloses approximately the same features as that for births—financial crises and droughts having a similar effect. The numbers for 1914 and 1915 showed a considerable increase over previous years. From 1916 to 1918 there was a rapid fall, the numbers being much below those of pre-war years. During 1919 and 1920 the recovery was very rapid, the total for the latter year being the highest ever recorded. The totals for 1923 to 1929 were not so favourable.

The characteristic feature of the graph of deaths is its irregular nature. On the whole, however, there is an increase which is due to the growth of population.

3. **Graphs of Annual Birth, Marriage, and Death Rates, and Rate of Natural Increase.**—The graph of the birth rate indicates a well-marked decline throughout the whole period. This reduction of rate has been subject to fluctuations, there being two periods of arrested decline, viz., from 1877 to 1890, and from 1903 to 1912.

The variations in the marriage rates, though less abrupt than those in the birth and death rates, have ranged from a minimum of 6.08 per 1,000 which marked the culmination of a commercial depression in 1894 to a maximum of 9.62 per 1,000 in 1920.

On the whole, the graph for the death rate furnishes clear evidence of a satisfactory decline during the period. The graph brings into prominence six years in which the rates were very high when compared with adjacent years, viz., 1860, 1866, 1875, 1884, 1898, and 1919. Epidemics of measles were largely responsible for the high rates in the first five years, while influenza caused the increase during 1919.

The graph of natural increase shows roughly the same variations as that for the birth rate, but the influence of the death rate is indicated by the very low rates of natural increase for 1875, 1898, and 1919, which resulted from the exceptionally high death rates of those years.

CHAPTER XXVI.

MISCELLANEOUS.

§ 1. Patents, Trade Marks, and Designs.

1. *Patents.*—(i) *General.* The granting of patents is regulated by the Commonwealth Patents Act 1903–21, which, in regard to principle and practice, has the same general foundation as the Imperial Statutes, modified to suit Australian conditions. The Act is administered by a Commissioner of Patents. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout Australia, Papua and the Territory of New Guinea, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent, or within such extended time, not exceeding one year, and upon payment of further fees, as may be allowed.

(ii) *Summary.* The number of separate inventions in respect of which applications were filed during the years 1925 to 1929 is given in the following table, which also shows the number of letters patent sealed in respect of applications made in each year :—

PATENTS, AUSTRALIA.—SUMMARY, 1925 TO 1929.

Particulars.	1925.	1926.	1927.	1928.	1929.
No. of applications	5,306	5,391	5,683	6,530	6,806
No. of applications accompanied by provisional specifications	3,405	3,515	3,627	3,993	4,021
Letters patent sealed during each year	2,479	2,706	2,633	2,615	2,881

(iii) *Revenue.* The revenue of the Commonwealth Patents Office during the years 1925 to 1929 is shown hereunder :—

PATENTS, AUSTRALIA.—REVENUE, 1925 TO 1929.

Particulars.	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£
Fees collected under Patents Acts 1903–21 ..	29,017	30,967	30,602	32,573	36,686
Receipts from publications	926	733	1,101	1,331	1,405
Total	29,943	31,700	31,703	33,904	38,091

2. *Trade Marks and Designs.*—(i) *Trade Marks.* Under the Trade Marks Act 1905, the Commissioner of Patents is also Registrar of Trade Marks. This Act has been amended from time to time, the last amendment having been made in 1922. Special provisions for the registration of a “Commonwealth Trade Mark” are contained in the Act of 1905 and are applicable to all goods included in or specified by a resolution passed by both Houses of Parliament that the conditions as to remuneration of labour in connexion with the manufacture of such goods are fair and reasonable.

(ii) *Designs.* The Designs Act 1906, as amended by the Patents, Designs and Trade Marks Act 1910, and the Designs Act 1912, is now cited as the Designs Act 1906-1912. Under this Act a Commonwealth Designs Office has been established, and the Commissioner of Patents appointed "Registrar of Designs."

(iii) *Summary.* The following table shows the applications for trade marks and designs received and registered during the years 1925 to 1929 :—

TRADE MARKS AND DESIGNS, AUSTRALIA.—SUMMARY, 1925 TO 1929.

Applications.			1925.	1926.	1927.	1928.	1929.
RECEIVED.							
Trade Marks	..	..	2,770	2,821	2,960	2,882	2,904
Designs	..	..	554	329	580	574	568
REGISTERED.							
Trade Marks	..	..	2,029	1,971	2,177	2,175	2,337
Designs	..	..	439	537	546	694	547

(iv) *Revenue.* The revenue of the Trade Marks and Designs Office during the years 1925 to 1929 is given hereunder :—

TRADE MARKS AND DESIGNS, AUSTRALIA.—REVENUE, 1925 TO 1929.

Particulars.	1925.			1926.			1927.			1928.			1929.		
	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.
	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
Fees collected under Commonwealth Acts	9,310	629	186	9,246	407	210	9,709	722	198	9,420	795	264	12,702	718	259

No fees in respect of Trade Marks have been collected under State Acts since the year 1922.

§ 2. Copyright.

1. *Legislation.*—Copyright is regulated by the Commonwealth Copyright Act of 1912, details of which will be found in previous issues of the Official Year Book (see No. 8, p. 1066), while, subject to modifications relating to procedure and remedies, the British Copyright Act of 1911 has been adopted and scheduled to the Australian law.

Reciprocal protection of unpublished works was extended in 1918 to citizens of Australia and of the United States under which copyright may be secured in the latter country by registration at the Library of Congress, Washington. The Commonwealth Government promulgated a further Order in Council which came into operation on the 1st February, 1923, and extended the provisions of the Copyright Act to the foreign countries of the Copyright Union, subject to the observance of the conditions therein contained.

2. **Applications and Registrations.**—The following table shows under the various headings the number of applications for copyright received and registered, and the total revenue obtained for the years 1925 to 1929 :—

COPYRIGHT, AUSTRALIA.—SUMMARY, 1925 TO 1929.

Particulars.	1925.	1926.	1927.	1928.	1929.
Applications received—					
Literary No.	1,269	1,166	1,256	1,241	1,142
Artistic No.	134	115	176	160	141
International No.	15	23	13	4	17
Applications registered—					
Literary No.	1,257	1,105	1,180	1,176	1,101
Artistic No.	117	105	171	152	127
International No.	4	19	10	3	5
Revenue £	360	340	376	366	356

§ 3. Local Option, and Reduction of Licences.

Local option concerning the sale of fermented and spirituous liquors is in force in all the States, the States being divided into areas generally conterminous with electoral districts, and a poll of the electors taken from time to time in each district regarding the continuance of the existing number of licensed premises, the reduction in number, or the closing of all such premises. Provision is made for giving effect to the results of the poll in each district in which the vote is in favour of a change.

In previous issues of the Year Book (see No. 22, p.p. 1005–1008), details, by States, of polls taken and the operations of Licences Reduction Boards were published, but, owing to considerations of space, cannot be inserted in this issue.

§ 4. Lord Howe Island.

1. **Area, Location, etc.**—Between Norfolk Island and the Australian coast is Lord Howe Island, in latitude 31° 30' south, longitude 159° 5' east. It was discovered in 1788. The total area is 3,220 acres, the island being 7 miles in length and from $\frac{1}{4}$ to $1\frac{1}{2}$ miles in width. It is distant 436 miles from Sydney, and in communication therewith by monthly steam service. The flora is varied and the vegetation luxuriant, with shady forests, principally of palms and banyans. The highest point is Mount Gower, 2,840 feet. The climate is mild and the rainfall abundant, but on account of the rocky formation only about a tenth of the surface is suitable for cultivation.

2. **Settlement.**—The first settlement was by a small Maori party in 1853; afterwards a colony was settled from Sydney. Constitutionally, it is a dependency of New South Wales, and it is included in the electorate of Sydney. A Board of Control manages the affairs of the island and supervises the palm seed industry referred to hereunder.

3. **Population.**—The population at the Census of 3rd April, 1921, was 65 males, 46 females—total 111.

4. **Production, Trade, etc.**—The principal product is the seed of the native or Kentia palm. The lands belong to the Crown. The occupants pay no rent, and are tenants on sufferance.

§ 5. Commonwealth Council for Scientific and Industrial Research.

1. **General.**—By the Science and Industry Research Act 1926, the previously existing Commonwealth Institute of Science and Industry was reorganized under the title of the Council for Scientific and Industrial Research. An account of the organization and work of the former Institute was given in previous issues of the Official Year Book. (*See* No. 18, p. 1062.)

2. **Science and Industry Research Act 1926.**—This Act provides for a Council, consisting of—

- (a) Three members nominated by the Commonwealth Government.
- (b) The Chairman of each State Committee constituted under the Act.
- (c) Such other members as the Council, with the consent of the Minister, co-opted by reason of their scientific knowledge.

The three Commonwealth nominees form an Executive Committee which may exercise, between meetings of the Council, all the powers and functions of the Council, of which the principal are as follow:—(a) The initiation and carrying out of scientific researches in connexion with primary or secondary industries in the Commonwealth; (b) the training of research workers and the establishing of industrial research studentships and fellowships; (c) the making of grants in aid of pure scientific research; (d) the establishment of industrial research associations in any industries; (e) the testing and standardization of scientific apparatus and instruments; (f) the establishment of a Bureau of information; and (g) the function of acting as a means of liaison between the Commonwealth and other countries in matters of scientific research.

State Committees have been constituted in accordance with regulations that have been prescribed, and their main function is to advise the Council as to matters that may affect their respective States. A sum of £250,000 was appropriated under the terms of the Act for the purpose of scientific and industrial investigations. Subsequently an additional sum of £250,000 was appropriated for a similar purpose.

3. **Science and Industry Endowment Act 1926.**—Under this Act the Government has established a fund of £100,000, the income from which is to be used to provide assistance (a) to persons engaged in scientific research, and (b) in the training of students in scientific research. Provision is made for gifts or bequests to be made to the fund, which is controlled by a trust consisting of the three Commonwealth nominees on the Council. In accordance with the Act arrangements have been made to send a number of qualified graduates abroad for training in special fields of work.

4. **Work of the Council.**—The full Council held its first meeting in June, 1926, since which time it has held meetings at about half-yearly intervals. It has adopted a policy of placing each of its major fields of related researches under the direction of an officer having a standing at least as high as, if not higher than, that of a University Professor.

The main branches of work of the Council are (i) plant problems; (ii) soil problems; (iii) entomological problems; (iv) animal nutrition; (v) animal diseases; and (vi) forests products. More detailed information concerning the work of the Council may be found in Year Book No. 22, pp. 1009 and 1010, but considerations of space preclude its insertion herein.

§ 6. The Commonwealth Solar Observatory.

1. **Reasons for Foundation.**—The Commonwealth Solar Observatory was established for the study of solar phenomena, for allied stellar and spectroscopic research, and for the investigation of associated terrestrial phenomena. Its situation is such that it will fill a gap in the chain of existing astrophysical observatories; with its completion there will be stations separated by 90 degrees of longitude round the globe. In addition to

advancing the knowledge of the universe and the mode of its development, it is hoped that the eventual discovery of the true relation between solar and terrestrial phenomena may lead to results which will prove of direct value to the country.

2. History of Inauguration.—A short account of the steps leading up to the establishment of the Observatory will be found in Official Year Book No. 19, p. 979. Limits of space preclude its repetition in this issue.

3. Site of the Observatory.—The site selected for the Observatory is on Mount Stromlo, a ridge of hills about 7 miles west of Canberra. The highest point is 2,560 feet above sea level, or about 700 feet above the general level of the Federal Capital City.

4. Equipment.—The bulk of the telescopic equipment is due to the generosity of supporters of the movement in England and Australia. The gifts include a 6-in. Grubb refracting telescope, presented by the late W. E. Wilson, F.R.S., and Sir Howard Grubb F.R.S., trustees of the late Lord Farnham; a 9-in. Grubb refractor with a 6-in. Dallmeyer lens, both presented by the late Mr. James Oddie, of Ballarat; while Mr. J. H. Reynolds of Birmingham, presented a large reflecting telescope with a mirror 30 inches in diameter. The equipment also includes spectroscopes for the examination of spectra in the infra-red, violet and ultra-violet regions. Donations amounting to over £2,500 have been received, and form the nucleus of a Foundation and Endowment Fund.

5. Observational Work.—The observational work embraces the following:—(a) solar research, (b) stellar research, (c) spectroscopic researches, (d) atmospheric electricity, (e) ozone content of the atmosphere, (f) luminosity of the night sky, and (g) meteorological observations. A more detailed account of the observational work cannot, owing to limits of space, be published in this issue, but may be found in previous issues (see No. 22, p. 1011).

§ 7. Department of Chemistry, South Australia.

This Department, formed in 1915, is principally engaged in general routine chemical examinations and analyses in pursuance of various Acts of Parliament and for Government Departments, but the chemical investigation of local products and industries forms an important branch of its work. The Department administers the Gas Act 1924, the Inflammable Oils Acts, and the provisions of the Marine Board and Navigation Act relating to explosives. Researches have been carried out for the Wheat Weevil Committee, and investigations have been made into the lignites at Moorlands, the conditions of safe storage of petrol in tanks, the utilization of grapes and surplus lemons, cold-water paints, calorific values of South Australian firewoods, charcoal and coke, kernel oil from peaches and apricots, and a survey of the tannin resources of South Australia.

§ 8. State Advisory Council of Science and Industry of South Australia.

The Advisory Council of Science and Industry of South Australia is the result of the fusion of the members of the Committee of Scientific Research and the Committee on post-war problems. The members of the Council, who all act in an honorary capacity, are the nominees of the different public bodies in the State, such as the Chamber of Commerce, the Chamber of Manufactures, Associated Banks, United Trades and Labour Council, Employers' Federation, etc., and include a number of Government technical officials and University professors.

For the purposes of investigation, the Council is divided into Committees, under the headings Agriculture, Pastoral, Mineral, Manufacture, Trade, Commerce, and Transport. These Committees consider and take evidence on subjects proper to their provinces, and report to the Government.

The office of the Council is attached to the Department of Chemistry, where research work is carried out at the instance of the Council, the Director of Chemistry being Vice-Chairman of the Council. Eleven reports have been issued during the years 1919 to 1929, which contain a summary of the work done, together with reports of investigations, including the "Wheat Pests Problem;" "Utilization of Surplus Lemons;" "Cold Water Paint;" "Calorific Values of Different Firewoods;" "Peach and Apricot Kernel Oil;" "Tannin Resources of South Australia;" "Brown Coal Experiments;" "A Gauge for Petrol Tanks;" "The Safe Storage of Petrol in Bulk;" "A Process for Preventing Infestation of Insect Pests in Dried Fruits;" and "The Use of Aluminium Vessels for Cooking Foods," etc. The Council also distributes information forwarded by the Commonwealth Department of Markets.

§ 9. Standards Association of Australia.

This Association was established under the aegis of the Commonwealth and State Governments for the promotion of standardization and simplified practice.

In addition to the Council and Standing and Organization Committees, the following Sectional Committees have been appointed to formulate Australian standard specifications:—(1) Electrical; (2) Structural Steel; (3) Tramway Rails and Fishplates; (4) Pipes and Pipe Fittings; (5) Paints and Varnishes; (6) Co-ordination of Methods of Physical Testing, Sampling, and Chemical Analysis; (7) Locomotive; (8) Cement; (9) Railways Rails and Fishplates; (10) Machine Parts; (11) Leather and Composition Belting; (12) Road Materials; (13) Plumbing and Sanitary Fittings; (14) Colliery Equipment; (15) Lubricants; (16) Artesian Bore Casing; (17) Building Materials; (18) Reinforced Concrete Regulations; (19) Regulations for Boilers and Unfired Pressure Vessels; (20) Cranes; (21) Coal—Purchase, Sampling, and Analysis; (22) Non-Ferrous Metals and Alloys; (23) Lift Installations; (24) Pump Test; (25) Containers for Hazardous Goods; (26) Calcium Carbide; (27) Regulations for Steel Frame Buildings; (28) Electrical Wiring Rules; (29) Timber; (30) Conditions of Contract; (31) Typography; (32) Welding; (33) Firebricks.

A Power Survey Committee to deal with the development and co-ordination of power schemes has also been appointed.

The objects of the Association include the following:—To prepare and promote the general adoption of standards in connexion with structures, materials, etc.; to co-ordinate the efforts of producers and users for the improvement of materials, processes, and methods; and to procure the recognition of the Association in any foreign country.

The sole executive authority of the Association is vested in the Council, which undertakes the whole of the organization of the movement, the raising of the necessary funds, the controlling of the expenditure, the arranging of the subjects to be dealt with by the various sectional and sub-committees, and the authority of the issue of all the reports and specifications.

The Association was established in July, 1929, by amalgamation of the Australian Commonwealth Engineering Standards Association and the Australian Commonwealth Association of Simplified Practice.

10. Valuation of Australian Production.

1. Value of Production.—The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries,

poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact, complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in connexion with the value of production from the agricultural and pastoral industries, which, it is believed, in the main give fairly accurate results. The returns given in the following table for 1916 and subsequent years may be taken as substantially correct. The table hereunder shows the approximate value of the production from all industries during the years specified :—

ESTIMATED VALUE OF PRODUCTION.—AUSTRALIA, 1916 TO 1928-29.

Year.	Agriculture.	Pastoral.	Dairy, Poultry, and Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing. (a)	Total.
	£1,000.	£1,000.	£1,000.	£1,000.	£1,000.	£1,000.	£1,000.
1916 ..	61,255	83,003	27,931	6,062	23,192	60,502	261,945
1917 ..	59,641	91,917	31,326	6,147	24,998	65,327	279,356
1918 ..	59,036	96,573	33,738	6,890	25,462	70,087	291,786
1919-20 ..	72,202	111,594	38,830	9,670	18,982	92,330	343,608
1920-21 ..	112,801	90,573	52,613	11,136	21,613	101,778	390,514
1921-22 ..	81,890	74,982	44,417	10,519	19,977	112,517	344,302
1922-23 ..	84,183	97,029	43,542	11,124	20,316	123,188	379,382
1923-24 ..	81,166	110,075	42,112	11,866	22,232	132,732	400,183
1924-25 ..	107,163	126,773	45,190	12,357	24,646	137,977	454,106
1925-26 ..	89,267	113,327	48,278	12,784	24,592	143,256	431,504
1926-27 ..	98,295	111,716	46,980	12,790	24,007	153,634	447,422
1927-28 ..	84,328	124,554	50,261	12,181	22,983	158,562	452,869
1928-29 ..	89,440	116,733	50,717	11,617	19,597	159,759	447,863

(a) These amounts differ from those given in Chapter XXII., Manufacturing Industry, which include certain products included under Dairy Farming and Forestry in this table.

2. Relative Productive Activity.—The relative output or production per head of population measured quantitatively cannot be gauged from a mere statement of the total value of production from year to year. If measured by mere value, increase of price might have the effect of making an equal production to that of a time when prices were lower, and show an increase which would, of course, be misleading. For example, the annual figures relating to the estimated value of production from Australian industries do not directly show whether there has been any increase in the *quantity* produced, since the price-level at the time is itself a factor in the determination of the values. Before therefore, any estimate of the relative increase or decrease in production (that is, in the relative quantity of output) can be formed, the variations due to the price element must be eliminated. This is done in the following table, in which Column I. shows the estimated value of production (i) in the aggregate and (ii) per head of mean population. In Column II. the estimated value of production per head of population is shown in the form of index-numbers with the year 1911 as base; that is to say, the production per head in 1911 is made equal to 1,000, and the values for the other years computed accordingly. In Column III. production price index-numbers are given; it is assumed that these index-numbers reflect, with substantial accuracy, variations in production prices in Australia as a whole. The figures in Column IV. are obtained by dividing the figures for each year in Column II. by the corresponding figures in Column III. They show the estimated relative productive activity per head of population, taking the year 1911 as the basic or standard year, the fluctuations due to variations in prices having been eliminated :—

RELATIVE PRODUCTIVE ACTIVITY.—AUSTRALIA, 1871 TO 1928-29.

Year.	I.		II.	III.	IV.
	Estimated Value of Production.		Relative Value of Production per Head (Year 1911 = 1,000).	Production Price Index-Numbers (Year 1911 = 1,000. (a))	Estimated Relative Productive Activity Index-Numbers (Year 1911 = 1,000. (a))
	(i) Total (000 omitted)	(ii) Per Head of Population.			
	£	£			
1871 ..	46,700	27.46	667	1,229	543
1881 ..	71,116	30.83	749	1,121	668
1891 ..	96,087	29.65	720	945	762
1896 ..	92,605	26.06	633	922	686
1901 ..	114,585	29.96	728	974	747
1906 ..	147,043	35.94	873	948	921
1911 ..	188,359	41.18	1,000	1,000	1,000
1916 ..	261,945	53.26	1,293	1,412	916
1921-22 ..	344,302	62.50	1,518	1,629	932
1924-25 ..	454,106	77.31	1,877	1,930	873
1925-26 ..	431,504	72.01	1,748	1,880	930
1926-27 ..	447,422	73.22	1,778	1,835	969
1927-28 ..	452,869	72.64	1,764	1,953	903
1928-29 ..	447,863	70.68	1,716	1,831	937

(a) Production Price Index-numbers are not available prior to 1908, and Wholesale Price Index numbers are substituted therefor.

It should be noted, however, that the index-numbers from the year 1911 onwards in columns III. and IV., are not comparable with those appearing in the same table shown in Year Books issued prior to No. 22, 1929. This is due to an alteration in the method of computing the index-number for production in column III. and consequently the index-number in column IV. has been adjusted accordingly. Fuller particulars of the change in method may be found in Production Bulletin No. 22.

The index of productive activity given above is based on total population and is that most usually employed for such a purpose. As a measure of the efficiency of the whole community to provide with its existing organization the commodities produced in the industries concerned the index is correct, but it does not necessarily indicate the variation in efficiency of the workers engaged in those industries, since these workers may not represent a constant proportion of the total population. As a fact this proportion is diminishing, and if the index were based on persons engaged in the industries rather than on total population it would be increased from 1 to 7 per cent. in the later years of the period, and the index for 1928-29 instead of falling short of the 1911 standard would exceed it by approximately 7 per cent. This aspect of the question is at present the subject of further investigation.

In Year Book No. 5 (page 1217) will be found the value of production in each State at decennial intervals since 1871, and for the year 1909. Details for individual States are not available for subsequent years owing to discontinuance by the Customs Department of the collection of statistics of interstate trade.

§ 11. Film Censorship.

1. **Legislation.** The censorship of imported films derives its authority from section 52 (g) of the Customs Act, which is the section giving authority to prohibit the importation of goods. Under this section proclamations have been issued prohibiting the importation of films and relative advertising matter except under certain conditions and with the consent of the Minister. The conditions governing importation are contained in regulations issued under the Customs Act and provide, *inter alia*, that no film shall be registered which in the opinion of the censor is (a) blasphemous, indecent or obscene; (b) likely to be injurious to morality, or to encourage or incite to crime; (c) likely to be offensive to the people of any friendly nation; (d) likely to be offensive to the people of the British Empire; or (e) depicts any matter the exhibition of which is undesirable in the public interests.

The regulations governing the exportation of Australian-made films are similar, with the addition that no film may be exported which in the opinion of the Censor is likely to prove detrimental or prejudicial to the Commonwealth of Australia.

The Censorship consists of a Censorship Board of three persons and an Appeal Board of the same number, the headquarters of both Boards being in Sydney. Importers have the right of appeal to the Minister.

2. **Imports of Films.** Imported films dealt with by the Censorship for the year 1929 were as follows:—2,261 films of 4,502,377 feet passed without eliminations, 571 films of 2,866,298 feet passed after eliminations, and 100 films of 548,775 feet rejected in first instance, making a total of 2,932 films of 7,917,450 feet (one copy). The countries of origin were as follows:—United States of America, 2,322 films of 6,501,563 feet; United Kingdom, 343 films of 736,496 feet; and 267 films of 679,391 feet from other countries.

3. **Export of Films.** The regulations governing the export of films came into force on the 16th September, 1926. The number of films exported for the year 1929 was 718 of 666,103 feet (one copy).

§ 12. Marketing of Australian Commodities.

Particulars in respect of the various Commonwealth Acts and Regulations, together with the operations of the Boards or Councils appointed to assist or control the marketing of Australian commodities were published in previous issues of the Year Book, but, owing to considerations of space, cannot be inserted herein.

CHAPTER XXVII.

STATISTICAL ORGANIZATION AND SOURCES OF INFORMATION.

§ 1. General.

1. **Development of Australian Statistics.**—(i) *General.* An outline of the history and development of statistics in Australia was published in Year Book No. 19 (see p. 988) and previous issues, particular reference being made to the Crown Colony Blue Books, Statistical Registers, Prominent State Statisticians, Statistical Conferences, the Foundation of the Federal Bureau, and Uniformity of Control. It is not proposed to repeat this information in this issue.

(ii) *Present Organization.* The organization in respect of the collection, tabulation, etc., of statistical data as between the State and Federal Statistical Bureaux, and State and Federal Government Departments was described in Official Year Book No. 19, p. 990. Limits of space preclude its repetition in this issue.

§ 2. Statistical Publications of Australia.

1. **General.**—The official statistical publications of Australia may be divided bibliographically into two main divisions, viz.:—(1) Commonwealth publications dealing both individually and collectively with the several States of the Commonwealth, and (2) State publications dealing with individual States only. Besides these there are many other reports, etc., issued regularly, which though not wholly statistical, necessarily contain a considerable amount of statistical information. The more important of these published to November, 1930, are indicated below.

2. **Commonwealth Publications.**—Commonwealth publications may be grouped under two heads, viz.:—(i) Publications issued by the Commonwealth Statistician, and (ii) Parliamentary and Departmental Reports and Papers.

(i) *Publications issued by the Commonwealth Statistician.* The following is a list of the principal statistical publications issued from the Commonwealth Bureau of Census and Statistics since its inauguration up to November, 1930:—

Australian Life Tables, 1901–1910. Australian Joint Life Tables, 1901–1910.

Census (1911) Bulletins.

Census (1911) Results.—Vols. I., II., and III., with Appendix “Mathematical Theory of Population.”

Census (1921) Results.—Bulletins, Nos. 1 to 26. Parts I. to XVI., forming Vol. I., and Parts XVII. to XXIX., forming, with the Statistician's Report, Vol. II.

NOTE.—Part XXVIII., Life Tables.

Finance—Bulletins, 1907 to 1916–17 annually; 1917–18 and 1918–19 (one vol.); 1919–20 and 1920–21 (one vol.); 1921–22 to 1928–29 annually.

Labour and Industrial Statistics.—Memoranda and Reports, various, to 1913. *Labour Report*, annually, 1913 to 1929.

Local Government in Australia—July, 1919.

Official Year Book of the Commonwealth of Australia—Annually, 1907 to present issue (1930).

Oversea Trade, annually, 1906 to 1928–29.

Pocket Compendium of Australian Statistics (formerly *Statistical Digest*), 1913, 1914, 1916, and 1918 to 1930 annually.

Population and Vital Statistics Bulletins—Reports, various. Commonwealth Demography, 1911 to 1929 annually.

Production—Bulletins, annually, 1906 to 1928–29.

Professional Papers—Various. A full list will be found in Official Year Book No. 13, p. 3.

Quarterly Summary of Australian Statistics—first issue, No. 70, December, 1917, replacing *Monthly Summary of Australian Statistics* (Bulletins 1 to 69), and incorporating data from earlier publications relating to Finance, Labour, Shipping, Trade, Vital Statistics, Oversea Migration, etc.

Social Insurance—Report to the Hon. the Minister of Trade and Customs, 1910.

Social Statistics—Bulletins, 1907 to 1915 annually, and 1918.

Superannuation for the Commonwealth Public Service—Report to the Hon. the Minister for Home Affairs, 1910.

Transport and Communication—Bulletins, 1906, 1908 to 1916 annually; 1919 to 1929 annually.

Wealth—The Private Wealth of Australia and its Growth as ascertained by various methods, together with a Report of the War Census in 1915.

(ii) *Commonwealth Parliamentary and Departmental Reports and Papers.* Lists of the principal official reports and other documents containing statistical information issued from the inauguration of the Commonwealth were given in Year Books up to No. 15, but limits of space preclude the incorporation of this information in the present volume.

3. State Publications.—The chief statistical publications of each State are set out hereunder. Limits of space preclude a further enumeration of the various Departmental Reports, statements of accounts, etc., issued by officials, boards, local government bodies, etc., in each State.

- (a) New South Wales—Statistical Register (annual); Official Year Book of New South Wales (annual); Statesman's Year Book (annual); Vital Statistics (monthly and annual); Statistical Bulletin (monthly to December, 1919, thereafter quarterly).
- (b) Victoria—Statistical Register (annual to 1916, then discontinued); Victorian Year Book (annual); Statistical Abstracts (quarterly to 1917).
- (c) Queensland—Statistical Register (annual); Official Year Book, 1901; A.B.C. of Queensland Statistics (annual); Vital Statistics (annual and monthly).
- (d) South Australia—Statistical Register (annual); Official Year Book, 1912 and 1913; Statesman's Pocket Year Book (annual).
- (e) Western Australia—Statistical Register (annual); Statistical Abstracts (quarterly, previously issued monthly to July, 1917); Pocket Year Book of Western Australia (annual); Circular (monthly), containing Principal Statistics.
- (f) Tasmania—Statistical Register (annual); Statesman's Pocket Year Book (annual); Statistical Summaries (annual); Vital Statistics and Migration (annual and monthly).

§ 3. Selected List of One Hundred Representative Works Dealing with Australia.*

It is not claimed that this list is completely representative, as special consideration has been given to recent publication, also as to whether the book is still in print.

Much important literature necessary to the study of many aspects of Australia is contained in official publications or in Parliamentary Papers, which have not been included in this list.

GENERAL AND DESCRIPTIVE.

BRADY, E. J. *Australia Unlimited.* Melbourne, 1918.

BROWNE, G. S. *Australia: a General Account; History, Resources, Production, Social Conditions.* London, 1929.

FOX, Sir F. *Australia.* 2nd edition. London, 1927.

GRONDONA, L. ST. C. *The Kangaroo Keeps on Talking; or, The All-British Continent.* London, 1925.

HANCOCK, W. K. *Australia.* London, 1930.

JOSE, A. W., CARTER, H. J., and TUCKER, T. G., editors. *The Illustrated Australian Encyclopaedia.* 3rd edition. 2 vols. Sydney, 1926-27.

USSHER, K. *The Cities of Australia.* London, 1928.

* This list has been compiled by the Librarian of the Commonwealth Parliament Library. A copy of each of the works mentioned is preserved in the Library and access thereto may be had by any Commonwealth official or other authorized person.

DISCOVERY AND EARLY VOYAGES AND EXPLORATION.

- CALVERT, A. F. *Exploration of Australia*. 2nd edition. 2 vols. London, 1901.
 CARRUTHERS, Sir J. H. *Captain James Cook, R.N.: One Hundred and Fifty Years After*. London, 1930.
 MARIOTT, Mrs. C. B. *Early Explorers in Australia*. London, 1925.
 SCOTT, E. *Australian Discovery*. 2 vols. London, 1929.
 WOOD, G. A. *The Discovery of Australia*. London, 1922.

HISTORY AND BIOGRAPHY.

- BEAN, C. E. W., *editor*. *Official History of Australia in the War of 1914-1918* (in progress), Sydney, 1921 to date.
 JOHNS, F. *Who's Who in Australia, 1927-28*. Adelaide, 1927.
 JOSE, A. W. *A History of Australia from the Earliest Times to the Present Day*. 10th edition, Sydney, 1924.
 JOSE, A. W. *Builders and Pioneers of Australia*. London, 1928.
 MURDOCH, W. *Making of Australia: an Introductory History*. Melbourne, 1917.
 SCOTT, E. *Short History of Australia*. 5th edition. Oxford, 1928.
 WATSON, J. F., *editor*. *Historical Records of Australia* (in progress). Sydney, 1914-1925.

CONSTITUTION AND ADMINISTRATION.

- CRAMP, K. R. *State and Federal Constitutions of Australia*. 2nd edition. Sydney, 1914.
 HOLMAN, W. A. *The Australian Constitution: its Interpretation and Amendment*. Sydney, 1928.
 KERR, D. *The Law of the Australian Constitution*. Sydney, 1925.
 MOORE, Sir W. H. *The Constitution of the Commonwealth of Australia*. 2nd edition. Melbourne, 1910.
 QUICK, Sir J., and GARRAN, Sir R. R. *The Annotated Constitution of the Australian Commonwealth*, 2nd edition. Sydney, 1901.
 QUICK, Sir J., and GROOM, Sir L. E. *The Judicial Power of the Commonwealth: with the Practice and Procedure of the High Court*. Melbourne, 1904.
 QUICK, Sir J. *The Legislative Powers of the Commonwealth and the States of Australia*. Melbourne, 1919.
 SWEETMAN, E. *Australian Constitutional Development*. Melbourne, 1925.
 WISE, B. R. *The Making of the Australian Commonwealth, 1889-1900*. London, 1913.

POLITICS.

- BROWN, J. M. *Peoples and Problems of the Pacific*. 2 vols. London, 1927.
 CAMPBELL, P. C., MILLS, R. C., and PORTUS, Rev. G. V. *Studies in Australian Affairs*. Melbourne, 1928.
 CANAWAY, A. P. *The Failure of Federalism in Australia*. London, 1930.
 EGGELESTON, F. W., *editor*. *The Australian Mandate for New Guinea*. Melbourne, 1928.
 HUGHES, W. M. *The Splendid Adventure: a Review of Empire Relations within and without the Commonwealth of Britannie Nations*. London, 1929.
 LATHAM, J. G. *Australia and the British Commonwealth*. London, 1929.
 PHILLIPS, P. D., and WOOD, G. L., *editors*. *The Peopling of Australia*. Melbourne, 1928.
 ROBERTS, S. H. *History of Australian Land Settlement (1788-1920)*. Melbourne, 1924.
 ROYAL COMMISSION on the Constitution Report. Canberra, 1929.
 TURNER, H. G. *First Decade of the Australian Commonwealth: a Chronicle of Contemporary Politics, 1901-1910*. Melbourne, 1911.
 WILKINSON, H. L. *The World's Population Problems and a White Australia*. London, 1930.
 WILLARD, M. *History of the White Australia Policy*. Melbourne, 1923.

INDUSTRIES AND RESOURCES.

- AUSTRALIAN WOOL ANNUAL; *ed.* by D. B. Copland, 1927-28 to date. Melbourne.
 BILLIS, R. V., and KENYON, A. S. *Pastures New: an Account of the Pastoral Occupation of Port Phillip*. Melbourne, 1930.
 GREGORY, C. D. *Australian Steamships past and present*. London, 1928.
 HARDING, R. *Cotton in Australia: the Possibilities and Limitations of Australia as a Cotton-growing Country*. London, 1924.
 HAWKESWORTH, A. *Australasian Sheep and Wool*. 6th edition. Sydney, 1930.
 HUTCHINS, Sir D. E. *Discussion of Australian Forestry*. Perth, 1916.
 MAULDON, F. R. E. *The Economics of Australian Coal*. Melbourne, 1929.
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APPENDIX.

[Recent information and returns which have come to hand since the various chapters were sent to press are given hereunder.]

CHAPTER III.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

3. Governor-General and State Governors, p. 28.—The term of appointment of the Rt. Hon. John Lawrence, Baron Stonehaven, P.C., G.C.M.G., D.S.O., as Governor-General, having expired, the appointment, as acting Governor-General, of Lieut.-Colonel the Rt. Hon. Arthur Herbert Tennyson, Baron Somers, K.C.M.G., D.S.O., M.C., the Governor of Victoria, was gazetted on the 3rd October, 1930.

Early in December, 1930, the appointment was announced of the Rt. Hon. Sir Isaac Alfred Isaacs, P.C., K.C.M.G., Chief Justice of the High Court of Australia, as Governor-General. The appointment of an Australian to this office is unique in the history of the Commonwealth.

§ 2. Parliaments and Elections.

9. The Parliament of Western Australia, p. 35.—Particulars of the Legislative Council elections held on the 10th May, 1930, are as follows:—Electors enrolled—males 54,651, females 18,927, total 73,578; electors who voted—males 20,198, females 6,252, total 26,450; percentage of electors who voted in contested electorates—males 51.58, females 48.51, total 50.82.

§ 3. Administration and Legislation.

2. (c) Scullin Government, p. 38.—At the time of compiling this appendix no further change in the composition of the Ministry had taken place.

3. State Ministries.—New South Wales, p. 39.—The following is the composition of the New South Wales Ministry from the 4th November, 1930:—

Premier and Colonial Treasurer	HON. J. T. LANG.
Secretary for Mines and Minister for Labour and Industry	HON. J. M. BADDRELY.
Attorney-General	HON. A. A. LYSAGHT.
Minister for Agriculture and Minister for Forests	HON. W. F. DUNN.
Colonial Secretary	HON. M. GOSLING.
Minister for Education	HON. W. DAVIES.
Secretary for Lands	HON. J. M. TULLY.
Minister of Justice	HON. J. LAMARO.
Secretary for Public Works	HON. M. A. DAVIDSON.
Minister for Health	HON. J. MCGIRR.
Minister for Local Government	HON. W. J. MCKELL.
Assistant Minister for Labour and Industry	HON. W. T. ELY.
Vice-President of the Executive Council	HON. A. C. WELLS, M.L.C.
Honorary Minister	HON. J. M. CONNOR, M.L.C.

CHAPTER VI.

TRADE.

§ 4. Oversea Trade.

1. Total Oversea Trade, p. 113.—The following particulars have been compiled from preliminary returns relating to the overseas trade of Australia during the year 1929-30:—

OVERSEA TRADE.—AUSTRALIA.

Period.	Recorded Value.			Value per Inhabitant.			Per-centage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
1929-30	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
	131,134	124,849	255,983	20 8 11	19 9 3	39 18 2	95.21

CHAPTER VII.

TRANSPORT AND COMMUNICATION.

E. MOTOR VEHICLES.

5. Motor Vehicles Registered, p. 218.—Motor Vehicles registered at 30th June, 1930, were as follows:—

MOTOR VEHICLES REGISTERED AT 30th JUNE, 1930.

State or Territory.	Motor Cars.	Commercial Vehicles.	Motor Cycles.	All Vehicles.	
				No.	Per 1,000 of Population.
New South Wales ..	169,495	47,289	29,410	246,194	99
Victoria ..	125,315	29,167	25,405	179,887	101
Queensland ..	(a) 80,403	(b) 2,334	8,778	91,515	97
South Australia ..	47,100	11,232	8,616	66,948	115
Western Australia ..	30,707	11,781	7,707	50,195	120
Tasmania ..	12,533	2,198	4,814	19,545	91
Northern and Central Australia ..	264	241	44	549	115
Federal Capital Territory	1,113	245	123	1,481	168
Australia ..	466,930	104,487	84,897	656,314	102

(a) Pneumatic tyred vehicles.

(b) Solid tyred vehicles.

CHAPTER VIII.

A. COMMONWEALTH FINANCE.

COMMONWEALTH FINANCE, 1929-30.

Particulars.	See page—	Amount.	Per Head of Population.
Consolidated Revenue Fund—(a)		£	£ s. d.
Revenue	242	77,143,387	12 0 6
Expenditure	243	78,614,392	12 5 1
Loan Fund—			
Works Expenditure, 1929-30	259	5,294,202	0 16 6
Aggregate expenditure to 30th June, 1930 ..	..	83,032,879	..
Public Debt, 30th June, 1930—			
Commonwealth—			
War	285	282,390,532	43 17 2
Works .. .. .	..	90,566,830	14 1 3
Total .. .. .	..	372,957,362	57 18 5
States .. .. .	..	727,639,836	113 4 11
Grand Total .. .. .	..	1,100,597,198	170 18 7
Place of Maturity—			
Australia .. .. .	..	526,968,663	81 16 10
Overseas .. .. .	..	573,628,535	89 1 9
Total .. .. .	..	1,100,597,198	170 18 7

(a) Excludes interest received from States on account of States' Debts, recoverable from States.

CHAPTER XIII.

LABOUR, WAGES, AND PRICES.

C. EMPLOYMENT.

§ 3. Apprenticeship, p. 401.

Legislation relating to apprenticeship is in force in each State, the most recent Act being the Apprentices and Minors Act, No. 37 of 1929, in Queensland. This Act consolidates and amends the law relating to apprentices and minors, and provides for the appointment of a Board, called the "Apprenticeship Executive", constituted as follows:—Two representatives appointed by the Minister and three representatives each of employers and of unions. Provision is also made for the appointment of Group Committees and Advisory Committees. The duties of the Apprenticeship Executive include—advising the Minister as to the trades or industries which should be considered as skilled; the grouping of trades; the character of any entrance examinations which may be prescribed for apprentices; and any matter bearing upon any general principle of apprenticeship. The Act makes provision generally for control in the employment of apprentices and minors.

The Apprenticeship Commission in Victoria, appointed under the provisions in Act No. 3546 of 1927, issued its first Annual Report in September for the year ended 30th June, 1929. The Commission consists of five members:—(a) a President; (b) two members representing employers nominated by the Victorian Chamber of Manufactures, and (c) two members representing employees nominated by the Trades Hall Council of Melbourne. The first trades proclaimed by the Commission were those relating to plumbing and gasfitting. Other trades proclaimed later were—carpentry and/or joinery; plastering; painting, decorating and/or signwriting; and printing. Expert committees

were appointed for these trades. Applicants for apprenticeship must make application to the Commission setting out their ages and educational qualifications certified by the school authority. A certificate of qualification is issued to the approved applicant. The names of approved applicants are sent regularly to the secretaries of organized bodies of employers concerned.

After due inquiry the Commission determined that the lowest educational qualification for entry into apprenticeship in any of the skilled trades proclaimed was the satisfactory completion of the eighth-grade standard of the Education Department, or its equivalent. In respect to those trades for which the junior technical schools are specially staffed and equipped to give preparatory training prior to apprenticeship, the satisfactory completion of a two years' course was determined as the lowest qualification to be accepted without examination after a specified date (not less than twelve months from the coming into operation of the Regulations). The Commission considers that the avenue to apprenticeship in certain highly skilled trades through the preparatory training under expert instructors given in junior technical schools, which are free to all qualified to enter them, is advisable if the greatest value is to be achieved from the compulsory technical provisions of the Act, and from the educational institutions provided out of public funds for training for skilled industry.

The Report deals with the following matters in detail:—Determination of the proportion of apprentices to journeymen required to maintain the trades and to provide for future growth; what constitutes learning the trade; incentives to apprentices; co-ordination of technical education with workshop experience; compulsory technical school training of apprentices; organization of classes; and effect of awards of other industrial tribunals.

CHAPTER XVII. AGRICULTURAL PRODUCTION.

§ 4. Wheat.

3. Prices of Wheat, p. 480.—(i) *British Wheat*. The average price of British-grown wheat for the year 1929 was 42s. 5d. per quarter of 480 lbs., whilst the highest and lowest weekly averages amounted to 52s. 6d. and 39s. 7d. respectively.

7. Voluntary Wheat Pools, p. 483.—(i) *General*. Voluntary wheat pools again operated in the States of Victoria, South Australia, and Western Australia during the 1929-30 season. The voluntary wheat pool of New South Wales again did not operate during the season. The system adopted in these States is somewhat similar, and is a co-operative one controlled by trustees, or committees appointed by the growers, the whole of the proceeds, less administrative expenses, being distributed amongst contributors of wheat to the pool. The trading names of these organizations in the various States are as follows:—

Victoria.—Victorian Wheat-growers' Corporation Ltd.

South Australia.—South Australian Co-operative Wheat Pools Ltd.

Western Australia.—The Co-operative Wheat Pool of Western Australia.

The marketing of wheat in Queensland was conducted on the compulsory basis by the State Wheat Board, consisting of five elected representatives and the Director of Marketing who represents the Queensland Government. The chairman was appointed, for the first time, from the elected representatives of the growers.

(ii) *Delivery of Wheat to Pools*. The quantities of wheat received by the different pools, together with the percentage thereof on the total marketable wheat during 1929-30, were as follows:—

WHEAT RECEIVED BY VOLUNTARY POOLS, 1929-30.

Particulars.	Unit.	Victoria.	South Australia.	Western Australia.
Wheat received	Bushel	9,835,000	6,984,000	16,003,459
Percentage on Total Marketable Wheat	%	55	36	46

(iii) *Finance.* The requisite financial accommodation in Victoria and South Australia was furnished by the Commonwealth Bank. In Western Australia funds were made available by the Co-operative Wholesale Society Ltd. of Great Britain. Initial advances were made available to growers on the delivery of their wheat at country stations, but owing to the severe decline in prices no further payments have been made in Victoria or South Australia. In Western Australia a second payment of 5d. per bushel was made in October, 1930.

WHEAT POOLS ADVANCES(a) PER BUSHEL MADE TO OCTOBER, 1930.

Particulars.	Victoria.			South Australia.			Western Australia.		
	£	s.	d.	£	s.	d.	£	s.	d.
1st Payment	0	4	0	0	3	4	0	3	6
2nd Payment	(b)			(b)			0	0	5
Estimated Final Payment	(b)			(b)			0	0	0½

(a) Less Rail Freight.

(b) Not available.

In Queensland the Commonwealth Bank provides the financial assistance necessary to make advances on wheat delivered, the State Government guaranteeing the Wheat Board's accounts with the bank. All wheat not required for consumption on the farm is delivered to the Board, which is the sole marketing agency. The crop in 1929-30 amounted to 4,235,000 bushels, of which 3,974,000 bushels, or 94 per cent., was delivered into the Pool. Advances have been made on milling wheat as follows, viz. :—No. 1 quality, 4s. per bushel, No. 2, 3s. 10d. per bushel, and No. 3, 3s. 8d. per bushel, while advances on feed wheat ranged from 2s. 3d. to 3s. 3d. per bushel according to quality. A further advance will be made when the seasons operations have been finally dealt with.

CHAPTER XXI.

MINERAL INDUSTRY.

§ 1. The Mineral Wealth of Australia.

3. Value of Production p. 552.—The following table gives the value of Australian mineral production for the year 1929 :—

MINERAL PRODUCTION.—VALUE, 1929.

Mineral.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
	£	£	£	£	£	£	£	£
Gold ..	31,842	111,609	40,250	4,289	1,602,142	23,772	558	1,814,457
Silver and Lead ..	3,032,741	100	14,807	258	12,525	233,353	79	3,293,863
Copper ..	14,183	30	294,188	22,982	2,778	740,985	..	1,075,146
Iron ..	20,357	..	974	974,985	..	..	..	996,316
Tin ..	191,199	3,545	114,518	..	13,432	130,014	0,958	459,666
Zinc ..	802,693	..	..	..	..	185,964	..	988,657
Coal (Black) ..	5,952,720	813,370	1,199,599	..	426,706	105,877	..	8,498,272
Other ..	109,429	187,429	42,843	318,291	30,269	141,234	10,755	840,250
Total ..	10,155,164	1,116,033	1,707,179	1,320,805	2,087,352	1,561,109	18,345	17,966,627

CHAPTER XXIV. POPULATION.

§ 4. Distribution and Fluctuation of Population.

1. Present Number, p. 663.—The estimated population at the 30th June, 1930, was 6,438,999, distributed as follows:—

AUSTRALIA.—ESTIMATED POPULATION, 30th JUNE, 1930.

States and Territories.	Males.	Females.	Persons.
New South Wales	1,263,743	1,221,435	2,485,178
Victoria	883,327	899,809	1,783,136
Queensland	499,603	442,667	942,270
South Australia	299,813	280,806	580,619
Western Australia	226,387	192,256	418,643
Tasmania	107,187	108,353	215,540
Northern Territory	3,117	1,655	4,772
Federal Capital Territory	4,818	4,023	8,841
Total, Australia	3,287,995	3,151,004	6,438,999

The corresponding figures for Australia for the year ended 30th June, 1929, were 3,258,919 males and 3,114,300 females, or a total of 6,373,219. There was thus a total increase during the year ended 30th June, 1930, of 65,780, made up of 29,076 males and 36,704 females.

GENERAL INDEX.*

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